

Solutions Options Paper

Describe Solutions

PROJECT NAME: Federal Research Project 0092-0164 / SPR - 2253		DATE: 06 - 20 - 08
ISSUE TO BE RESOLVED: ProjectWise vs. FileNet		EVALUATION CRITERIA USED TO ASSESS THE PROBLEM: Testing, Piloting and Research
Leverage Existing IT Solutions – Buy Existing System – Build in House / Possible External Resources.		
RECOMMENDATION - OPTION NO>1 – Implementation of Bentley ProjectWise – Engineering Content Management System		
OPTION 1	OPTION 2	OPTION 3
Description: Implementation of Bentley ProjectWise – Engineering Content Management System	Description: Implementation of IBM – FileNet Data Management System	Description: Continued use of the X:CTDOT_Projects on MS Explorer
Pro's: <ol style="list-style-type: none"> 1. CTDOT has a Master Agreement in place for all Bentley Software. 2. ProjectWise Software Costs are included CTDOT's existing Enterprise License Subscription, which includes the software costs for all Bentley Infrastructure Design Applications. 3. Offers direct database integration with all Bentley CAD Applications currently in use at the Department of Transportation. (See Functional Specifications). 4. CTDOT has already begun piloting ProjectWise and has an 	Pro's: <ol style="list-style-type: none"> 1. DOIT has a Master Agreement in place for IBM-FileNet and has set the State Data Management System Standard to IBM FileNet. 	Pro's: <ol style="list-style-type: none"> 1. Already in Production 2. Users are already familiar with Windows Explorer

Solutions Options Paper

Describe Solutions

<p>existing approved DOIT Project Profile in place. Significant Business Partner Development has occurred.</p> <ol style="list-style-type: none"> 5. Federal Research Funding will be in place shortly with the sole purpose of evaluating/benchmarking CTDOT's traditional paper based processes vs. new processes using ProjectWise to accept digital submissions. 6. ProjectWise has Web and Geospatial Functionality 7. ProjectWise has a connector built for FileNet Interoperability. See Bentley Website and <u>Appendix C</u> 		
<p>Con's:</p> <ol style="list-style-type: none"> 1. New IT Infrastructure Dependant. 2. Web and Security issues have hampered the desired business function of the system. 3. PW may have to be customized to accommodate the Direct Cost Accounting System. 	<p>Con's:</p> <ol style="list-style-type: none"> 1. New IT Infrastructure Dependant 2. See Appendix A – Cost Comparison – NPV cost analysis shows ProjectWise as the most economical solution for CTDOT and the State of Connecticut. 3. See Appendix B – CTDOT EA – Response to IBM's Responses- A CTDOT FileNet/Sword System evaluation showed that the solution does not offer a complete “out-of-the-box” integration between 	<p>Con's:</p> <ol style="list-style-type: none"> 1. Network outages and performance issues cause production delays. 2. No web portal 3. CAD data processing cannot occur on a users local machines in order to streamline engineering data processing and production. 4. Non-Oracle based. 5. Existing server capacity and condition are non-conducive to long term development of further Engineering Applications and Data

Solutions Options Paper

Describe Solutions

	<p>Bentley CAD products currently deployed at CTDOT.</p> <p>4. See Appendix C – Michigan DOT FileNet vs. ProjectWise Comparison– Refer to Michigan DOT’s email correspondence regarding FileNet and ProjectWise.</p>	<p>Storage. (i.e. construction plan archives)</p> <p>6. Non-preferred to an Active Directory Environment. (Archive Projects)</p>
<p>Cost/Benefit (high level): See B/C Analysis on Website</p>	<p>Cost/Benefit (high level): See Above</p>	<p>Cost/Benefit (high level):</p>

Solutions Options Paper

Describe Solutions

Appendix A – Cost Comparison

Appendix A - Bentley ProjectWise vs. IBM FileNet

Bentley	Year 1	Year 2	Year 3
ProjectWise Base Lisc. (Site Lisc. Included as a part of DOT Bentley ELS)*	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00
Installation	\$ 35,000.00	\$ -	\$ -
Training (EA provides PW Training)	\$ 25,000.00	\$ 25,000.00	\$ 25,000.00
Annual Support (Site Lisc. Included as a part of DOT Bentley ELS)	\$ -	\$ -	\$ -
Discount Factor (5-Year)End of Year Payment (Nominal Rate)**	\$ 0.95	\$ 0.90	\$ 0.85
Present Value	\$ 23,652.50	\$ 22,377.50	\$ 21,170.00
Net Present Value	\$ 67,200.00		

IBM	Year 1	Year 2	Year 3
FileNET Base Lisc.	\$ 699,000.00	\$ -	\$ -
Installation	\$ 100,000.00	\$ -	\$ -
Training	\$ 30,000.00	\$ -	\$ -
Annual Support	\$ -	\$ 100,000.00	\$ 100,000.00
Sword			
Base Product	\$ 170,000.00		
Maint.	\$ 35,000.00	\$ 35,000.00	\$ 35,000.00
Professional Services	\$ 181,000.00	\$ 50,000.00	\$ 50,000.00
	\$ 1,215,000.00	\$ 185,000.00	\$ 185,000.00
Discount Factor (5-Year)End of Year Payment (Nominal Rate)**	\$ 0.95	\$ 0.90	\$ 0.85
Present Value	\$ 1,149,511.50	\$ 165,593.50	\$ 156,658.00
Net Present Value	\$ 1,471,763.00		

* For cost analysis purposes, CTDOT existing ELS Contract with Bentley (\$250,000) has been divided by the number of software packages currently in use to derive at: \$20,000

- MicroStation
- InRoads
- Haested
- STAAD
- Rebar
- ProjectWise
- Bentley Map
- OnSite
- Iplot
- DeCartes
- IRAS
- StormCAD
- LEAP

** From Federal Defense Procurement Sources on preparing NPV Analysis
http://www.acq.osd.mil/dpap/cpf/docs/contract_pricing_finance_guide/vol2_ch9.pdf

Solutions Options Paper

Describe Solutions

Solutions Options Paper

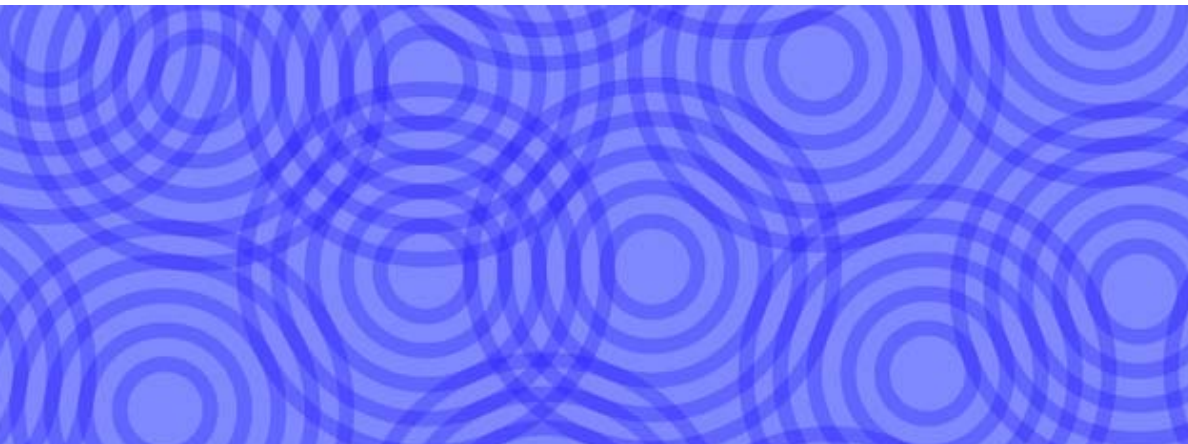
Describe Solutions

Appendix B – CT DOT EA – Response to IBM's Responses

State of CT DOT Response Document

Donald Lussier
IBM Software Sales Specialist
Enterprise Content Management
6 Lantern Lane
Cumberland, RI 02864
Business 401-334-9727
Cell 401-617-7431

August 29, 2008



Distributed 12.20.07

Table of Contents

- 1. Responses to Questions 2
- 2. Cost Structure 46

1. Responses to Questions

Question #	Question	Answer
1	<p><i>Specification</i></p> <p><i>Is Sword Fusion interoperable with Bentley InRoads and IPlot Software? If so, how is it interoperable?</i></p>	<p>Sword Fusion has been designed to be interoperable with other applications that integrate into the MicroStation environment. InRoads supports its own proprietary Explorer user interface outside of MicroStation. Fusion could store the InRoads file types in the database (or combination of files as complex documents). The user will interact with Fusion to retrieve/save the relevant files and then interact with InRoads using this data.</p> <p>The user would create IPlot plot sets and manage them through Sword Fusion – the plot set can then be launched. For closer level of integration Sword Fusion can be customized to add new commands to directly link with IPlot.</p>
2	<p><i>How does Sword Fusion work for end-users starting the process of referencing CAD files directly from the FileNet System?</i></p>	<p>When the parent drawing is added to the FileNet database through Sword Fusion the system locates the references and attempts to automatically resolve them with existing drawings in the database. If an automatic reference cannot be made, the system will prompt the user to handle the unresolved reference – this involves either selecting another drawing in the database as the required reference or selecting the references drawing and adding it to the database as a new drawing.</p> <p>We can also work with you on strategies and tools for batch indexing existing drawings (that may already be stored in FileNet or be stored in a file system). The requirements of each customer are usually slightly different in this area so we provides professional services to understand your requirements and amend our scripts / tools as appropriate.</p>
3	<p><i>Does IBM/FileNet/Sword offer a pdf engineering drawing commenting solution capable of server shared review</i></p>	<p>The AutoVue tool offers a collaborative review environment (requires on-line internet access) so that multiple users can simultaneously redline and comment on pdf engineering drawing.</p>

Comment [b1]: Ends Users cannot be reliant on SET files. PW Plot Organizer offers direct integration and flexibility to PW when users would have to create a plot sets from scratch.

Comment [b2]: This does not appear to be direct integration. PW offers direct integration with File References. In other words in PW end-users can reference files directly from the database. From this response, it appears Sword Fusion would be a reference healing tool.

Question #	Question	Answer
	<i>processes (similar to Adobe Acrobat 8.0 functionality?) and the ability to associate multiple drawing mark-ups with 1 comment?</i>	

Question #	Question	Answer
4	<i>Specification Can we write custom plugins for Filnet and Fusion?</i>	Sword Fusion allows the customer to configure and customize the user interface and store the results in a “theme”.
5	<i>When a file is opened for editing does it make a copy to the local workstation?</i>	When a document is viewed in the Fusion web client it is not copied to the local workstation. If a document is check out then the document is copied to the local workstation so it can be edited in the native application. The actual destination directory can be configured so that either user can select location or you can set a default location which could be on a shared network drive.
6	<i>Does FileNet have logins local to FileNet only not to the Windows domain?</i>	FileNet leverages Active Directory for logins so FileNet does not its own Login Id’s.
7	<i>Where would Microstation configuration files kept (in FileNet or outside of FileNet)?</i>	The MicroStation configuration files could be grouped together into a Fusion complex document and then stored in the FileNet database. We would recommend they are retained on the local workstation but can be easily retrieved and restored from FileNet database when a new workstation is being configured.
8	<i>What are the capabilities of Sword Fusion to keep up with frequent updates of versions of Bentley</i>	We have designed our integration to use well defined Bentley interfaces that are typically supported across multiple versions of the software. This reduces our effort and timeline to ensure support for new releases.

Comment [b3]: How do user preferences and configurations see the complex document.

Comment [b4]: Storing configurations on a local machine would make it extremely difficult for the Department to manage enterprise CAD Standards. PW Managed Workspaces would offer to link Department Standards.

Question #	Question	Answer
------------	----------	--------

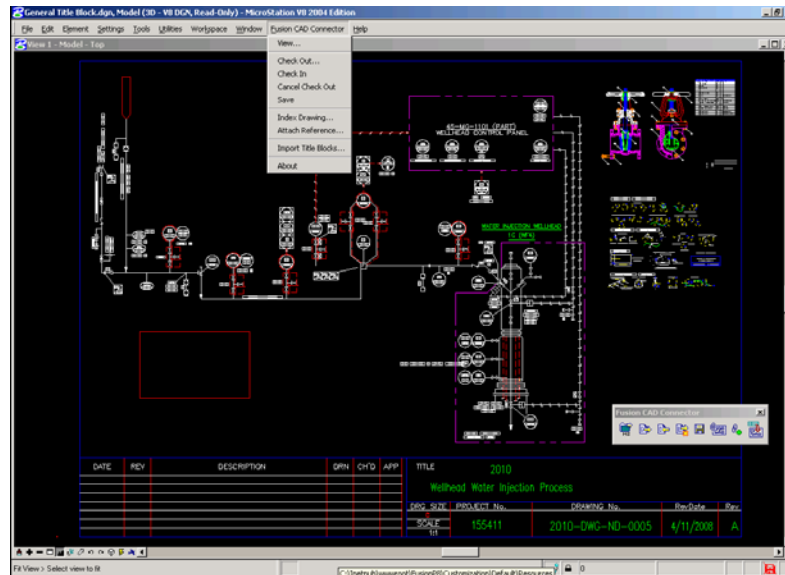
Software including MicroStation and InRoads?

Question #	Question	Answer
------------	----------	--------

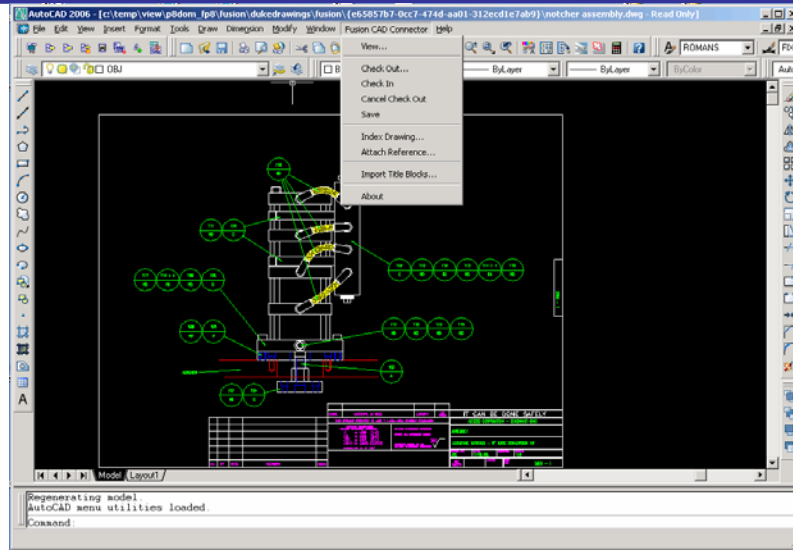
9

General Application Functions and Integration
The proposed system shall provide desktop application integration such that all file access functions are hooked to the Content Management System. This should include (but not be limited to) File> New, Open, and Save As. This should include Microsoft Office, Bentley MicroStation, IRAS/B, and Descartes, and Autodesk AutoCAD.

The proposed system integrates with AutoCAD, MicroStation and Microsoft Office.
 Sample MicroStation CAD Connector



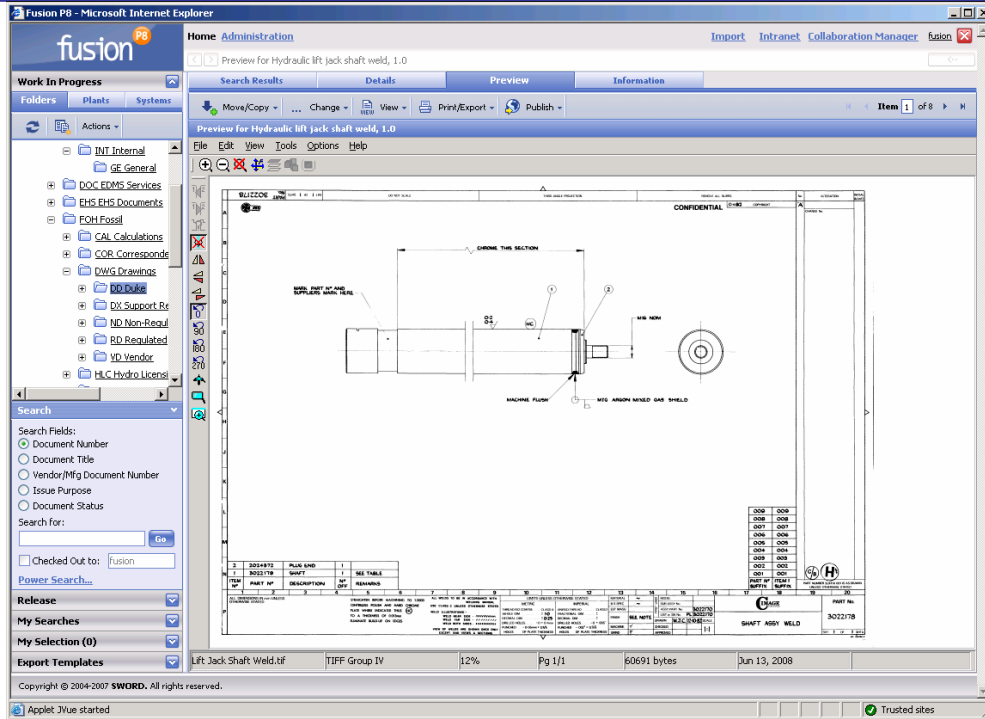
Sample AutoCAD CAD Connector (below)



10 *The proposed system shall provide support for Multiple Document Interface, where applicable. This should include (but not be limited to) Microsoft Office, Adobe PDF and AutoCAD applications.*

The proposed system supports the ability to open multiple documents into the application where this is supported by the integration tools provided by the application itself.

Sample CAD File Viewing in Fusion (below)



11 *In addition to the aforementioned integration, the proposed system shall provide attribute exchange for MicroStation, AutoCAD, and Microsoft Office document types. More specifically, the system shall provide the ability for attributes in the content*

The proposed system supports the exchange of metadata to/from the MicroStation and AutoCAD title blocks.

Question #	Question	Answer
	<p><i>management system to populate intelligent title blocks within CAD format documents, and custom fields within Office format documents.</i></p>	
12	<p><i>The proposed system should provide the capacity to specify both an edit, a redline, and a view application for each file type.</i></p>	<p>The proposed system supports a native (edit) and view rendition of each document. We do not recommend a specific redline rendition because the redlines are managed themselves as objects in the FileNet database.</p>
13	<p><i>The proposed system shall provide support for multiple versions of desktop applications. More specifically, the system should support multiple versions of MicroStation and AutoCAD, and provide a mechanism to distinguish between different versions of the</i></p>	<p>The proposed system will support integration with multiple versions of desktop applications. Specific minimum version levels are required for integration (Microsoft Office 2003, AutoCAD 2006, MicroStation 8) but documents generated by older versions of the applications can be viewed and redlined.</p>

Question #	Question	Answer
------------	----------	--------

same file type. For example, the system should be able to correctly launch AutoCAD 2004 to edit a DWG file of that vintage, and AutoCAD 2007 to edit a DWG file of that vintage.

14 *The system must be capable of the centralized creation and storage of electronic plan and specification packages throughout the entire contract development process (addendums and construction orders). The said electronic plan and spec packages are then enabled for possible transmission to DAS Web Portal (or other) in accordance*

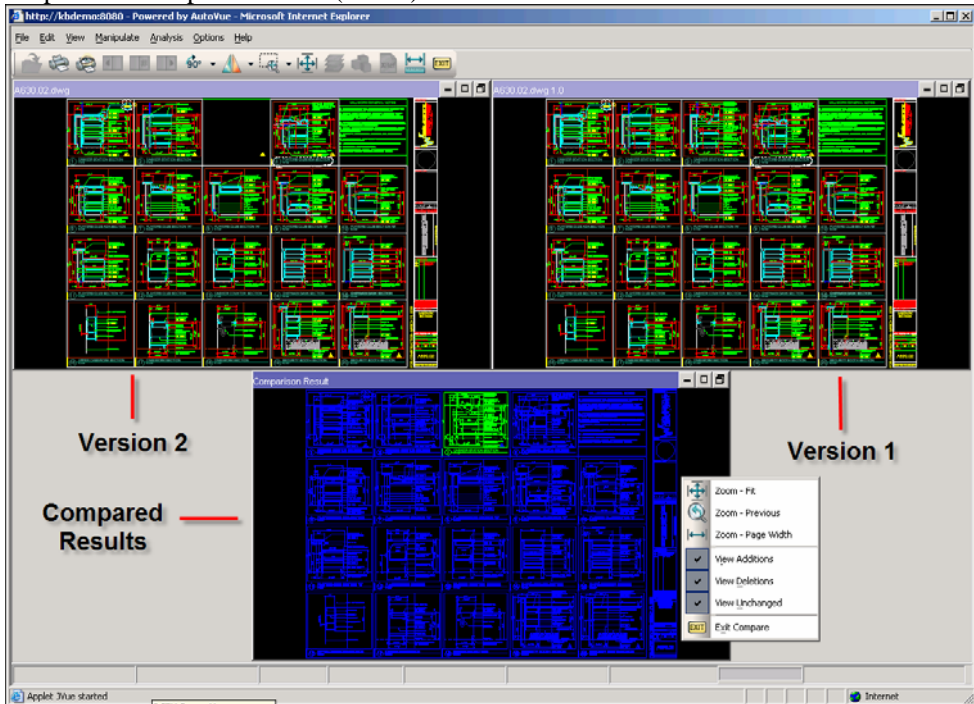
Sword Fusion logical documents support the creation of plan and specification packages. The Logical document is a container for other documents that are stored in the database. The contents of a logical document can be published to SharePoint web sites and then extracts the structure and documents for access via a web portal. Specific customization may be required to interface with DAS Web Portal.

Question #	Question	Answer
------------	----------	--------

with the above law.

- 15 *System shall provide ability for document comparisons between files with detailed specific output.* The proposed system allows multiple documents to be retrieved in a single operation and then they can be used in any application to perform comparisons.

Sample File Compare Screens (below)



- 16 *System shall provide ability for racking of versions and all their related files, as they existed when that version was created* The proposed system is able to track the version of all parent and references documents. The references can be assigned as static or dynamic. Static references mean that the parent drawing will always reference a specific version of a references drawing even though later versions may exist in the database.
- Sample Reference Version Tracking Information Screen, Master Showing References and their Specific Versions. (below)

Question # **Question** **Answer**

. For example, version 4 of a master file may currently be related to version 3 of one of its reference files. However, when the master file was at version 2, the reference file may have been at version

Search Results (285 Items)

Document Number	Vendor/Mfg Document Number	Document Status	Revision	Version	Creation Date	Document Title
2010-CAL-GC-0001		In Process	A	1.0	6/13/2008 4:32:03 PM	Hydraulic lift jack cylind
2010-COR-GC-0001		In Process	A	1.0	6/13/2008 4:32:06 PM	Hydraulic lift jack main
2010-DWG-DD-0001		In Process	A	1.0	6/13/2008 4:32:09 PM	Hydraulic lift jack shaft
2010-DWG-DD-0002		In Process	A	1.0	6/13/2008 4:32:09 PM	Hydraulic lift jack shaft
2010-DWG-DX-0001		In Process	A	1.0	6/13/2008 9:08:54 PM	Grid
2010-DWG-DX-0002		In Process	A	1.0	6/13/2008 9:10:38 PM	Roads & Pipes
2010-DWG-DX-0003		In Process	A	1.0	6/13/2008 9:12:57 PM	border
2010-DWG-DX-0004		In Process	A	1.0	6/13/2008 9:23:25 PM	Constraints
2010-DWG-DX-0005		In Process	A	1.0	6/13/2008 9:24:46 PM	Flanged Valve
2010-DWG-ND-0001	2605-1	In Process	A	2.0	6/13/2008 8:46:38 PM	Assembly
2010-DWG-ND-0002	2605-1	In Process	A	1.1	6/17/2008 4:53:50 PM	Accudyns Notcher Asse
2010-DWG-ND-0003		In Process	A	1.1	6/17/2008 4:53:49 PM	Accudyns Notcher Bill c

Contents for Wellhead Water Injection Process, 2.0

Document Number	Vendor/Mfg Document Number	Document Status	Revision	Version	Creation Date	Document Title
Wellhead Water Injection Process, 2.0						
Flanged Valve, 1.0						
Constraints, 1.0						

Master With References Showing Versions

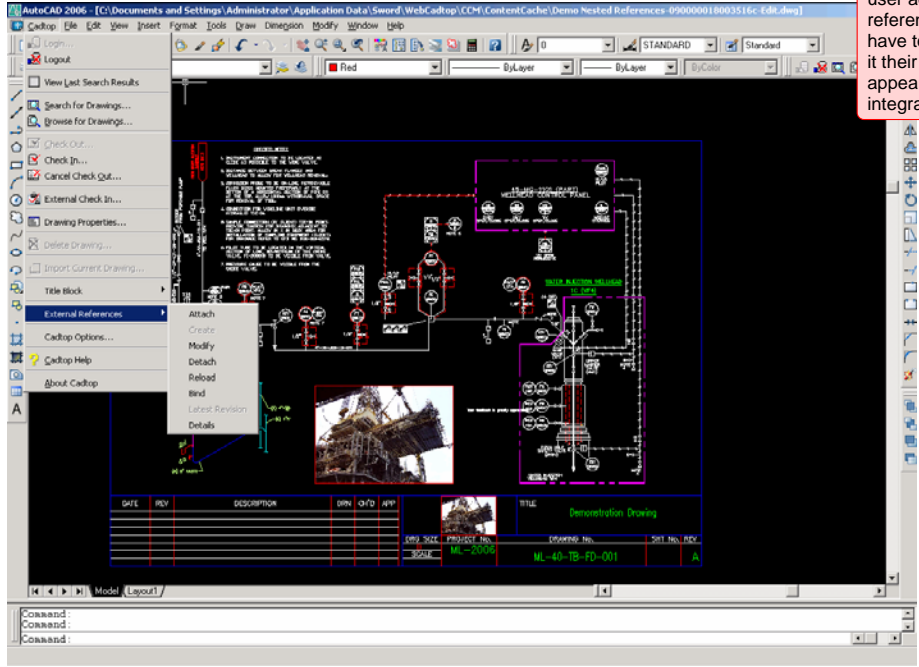
Question #	Question	Answer
17	<p>CAD Application Integration</p> <p><i>In addition to the general integration items, the proposed system shall provide CAD reference file support for Bentley's MicroStation, and Autodesk's AutoCAD. MicroStation versions supported should include MicroStation/J, V8 2004 Edition, and V8 XM Edition). AutoCAD versions supported should include AutoCAD 2000, 2002, 2004, 2005, and 2007.</i></p>	<p>The proposed system provides CAD reference file support for viewing for all application versions listed above. CAD reference file support through direct integration is supported from AutoCAD 2006 and MicroStation V8.</p>
18	<p><i>Reference file support should be broken down into the following specific functions, and itemized as supported or not, for both MicroStation and AutoCAD:</i></p> <ul style="list-style-type: none"> • <i>Attach/Detach Reference – should allow user to access</i> 	<p>Sword Fusion supports the ability to attach and detach references.</p>

Question #	Question	Answer
------------	----------	--------

content management repository, or optionally access local storage

Sample CAD Integration Menu Showing Attach/Detach Commands (below)

Comment [b5]: No screen shots from MicroStation.. How would a end-user adjust level symbology etc. of reference files? Seems like I would have to go into the database and set it their individually. There does not appear to be direct database integration?



19

Attach/Detach Reference should provide for immediate or delayed update of content management database, such that reference attachment changes are automatically recorded to the content management

If a user changes a reference (replaces instance, updates version) through Sword Fusion integration this will be reflected immediately.

Question #	Question	Answer
------------	----------	--------

system

20	<i>Attach/Detach Reference should support both Raster and Vector reference attachments</i>	Attach and detach is supported with both raster and vector references.	Comment [b6]: How is it supported directly in the database?
21	<i>Local Caching – The proposed system should support the concept of local caching such that performance is enhanced, and network transfers are minimized when working on compound document sets.</i>	Even though the master copy of the referenced drawings is stored in the FileNet database local copies can be retained on the users workstation (drawing border templates) to save the requirement for retrieval across the network when the parent drawing is opened.	Comment [b7]: There appears to be no automation with reference "copy outs".
22	<i>Reference Deletes – The proposed system should warn the user if they are attempting to delete a file that has been referenced to another file</i>	The system supports a generic user alert mechanism to provide a warning for many conditions – deleting a document referenced elsewhere is just one condition.	
23	<i>Reference Moves – The proposed system should automatically heal broken linkages as a result of moving a previously referenced file to a different folder.</i>	The parent drawing and its references are now stored in the FileNet database and hence this condition should no longer be applicable.	

Question #	Question	Answer
24	<i>Reference Renames - The proposed system should automatically heal broken linkages as a result of renaming a previously referenced file.</i>	The parent drawing and its references are now stored in the FileNet database and hence this condition should no longer be applicable.

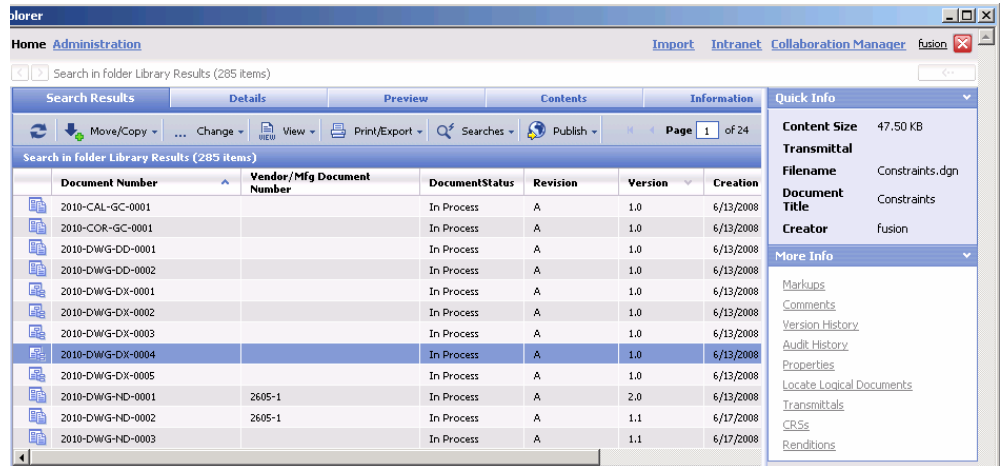
25 *Nested References – The proposed system should support the concept of nested reference files. More specifically, if file B references file C, should file B be attached to file A, then the user viewing/editing file A should see files B, and C.*

The proposed system will retrieve references from referenced documents (nested references) when the parent document is retrieved.

26 *Real-time notifications – The proposed system should support the concept of notifications such that the user is made aware when one of the files referenced in the active session has been modified by another user.*

The Fusion web client supports the “Quick Info” area to provide immediate notification on items such as the checkout status of a document. When a user selects a document they will immediately see this status.

Sample Quick Info Pane



27 *CAD Workspace support – The proposed system*

The workspace / profile creates a number of data files to represent the configuration information for the project / user. These data files can be organized as a complex document and stored in the database.

Question #	Question	Answer
------------	----------	--------

shall provide the ability to associate a MicroStation Workspace, or AutoCAD profile with a given file, or folder. Subsequent edit sessions for the file should then be forced to activate the specified workspace

- *In addition, Workspace /Profile support should feature inheritance such that the Workspace can be assigned at any level in the folder structure, and will inherit to all files/folders below it in the folder tree.*

28 *CAD Workspace management – The proposed system shall provide the*

The various elements of the workspace can be stored as a complex document and managed in the FileNet database. The complex document can then be retrieved by the user to download allow the workspace constituent files to their workstation.

Comment [b8]: It is not feasible for CTDOT end-users to remember to download workspaces on an as needed basis

Question #	Question	Answer
------------	----------	--------

capability to store designated workspace files (cell/block libraries, font resource files, linetype resource files, etc.) within the content management system. Required workspace files shall then be automatically downloaded to the client workstation when needed, based upon the workspace being assigned to a file or folder.

29 *InRoads Preferences – The proposed system must be capable of reading and writing Bentley InRoads preference files for the successful development, delivery and completion of High Value Data (Digital Terrain Models (.dtm) and coordinated geometry files (.alg).*

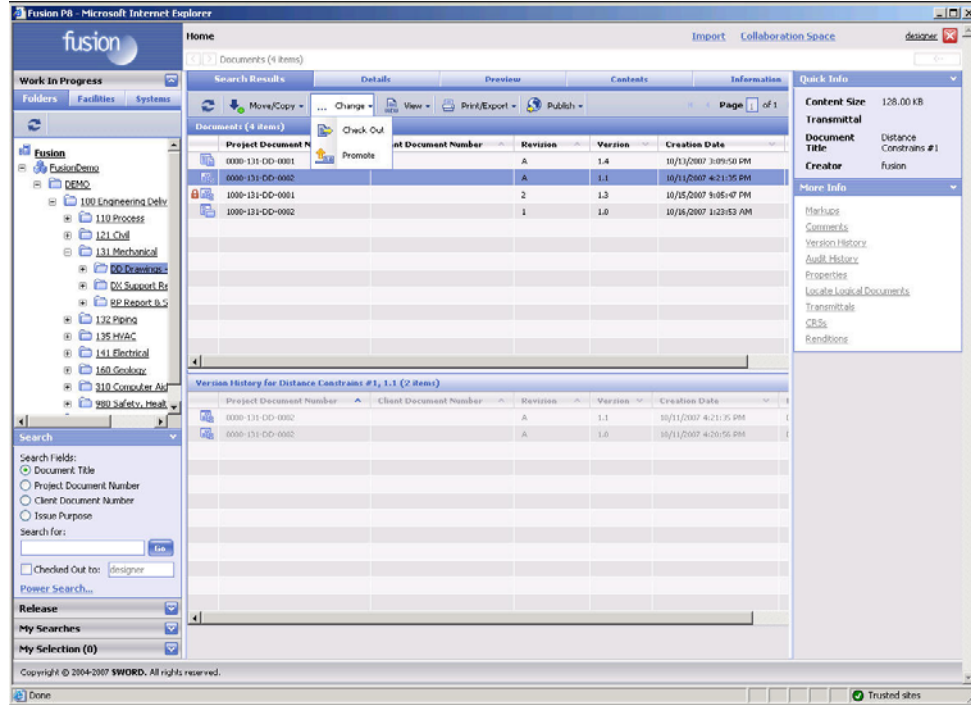
The Digital Terrain Models and Coordinated Geometry Files can be stored in the FileNet database.

Comment [b9]: It does not appear to offer direct integration to the database, similar to what PW offers with all other Bentley Products. Its one thing to store the files, its another layer of integration to be able to configure them inside the database like PW offers.

30 *Shall provide tracking abilities to view and* The proposed system allows multiple versions of documents to the stored in the database and the Fusion web client allows the user to list all versions of a document. The user is able to view one or more versions of a document.

monitor changes through viewing various versions in succession.

Sample Version Screen Showing Master File and Versions (below)



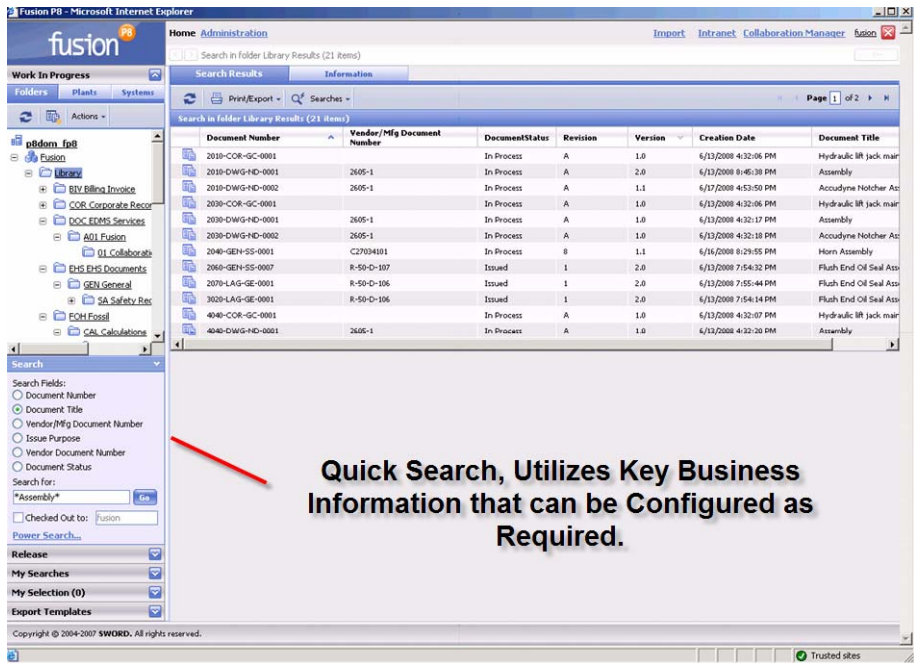
Question #	Question	Answer
31	<p><i>Legacy Data</i></p> <p><i>The proposed system shall provide a means of bulk-loading legacy documents into the content management repository. Bulk import methods should support (but not be limited to) the following functions:</i></p> <ul style="list-style-type: none"> • <i>Support import of individual files, or entire folder structures in a single operation</i> 	<p>The Sword Fusion Import tool supports the bulk indexing of individual files or groups of documents.</p>
32	<p><i>Import of simple files, or import of files with associated metadata (in either a delimited text file, or Excel spreadsheet)</i></p>	<p>The Import tool allows the customer to create different import templates to support mapping of metadata from the supplied input file containing metadata to fields associated with target document classes in the FileNet database.</p>
33	<p><i>Support of CAD documents including pre-existing raster and vector reference attachments. In the event of pre-existing reference file relationships, the system should provide a batch-mode reference discovery tool.</i></p>	<p>The proposed system is able to automatically resolve references when the reference drawing is already stored in the Fusion database. If the reference is not already stored in the database, this requires manual intervention as part of the indexing process.</p>

Question #	Question	Answer
------------	----------	--------

34 *The proposed system shall provide an easy means of viewing all files checked out to a given user.*

Sword Fusion allows the user to perform a quick search to identify documents that are checked out to a specific user.

Sample Quick Search Screen



35 *The proposed system shall provide an easy means of determining the list of files attached as reference to the file in question (forward look-up)*

The “More Info” panel in Sword Fusion supports an option to allow user to list documents referenced by the parent document.

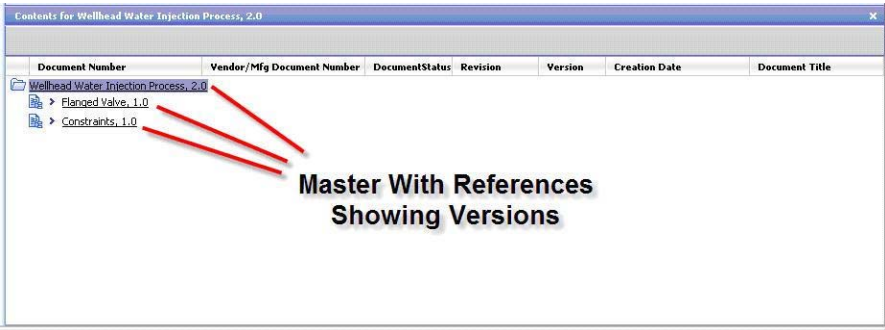
36 *The proposed system shall provide an easy means of determining the list of files that are referencing the file*

The “More Info” panel in Sword Fusion supports an option to allow user to list documents referenced by the parent document.

Question #	Question	Answer
------------	----------	--------

in question (reverse look-up)

Sample Forward and Reverse Reference Review (below)



37 *The proposed system shall be capable of performing full text searches on Microsoft Office document types, Bentley MicroStation documents, and Autodesk AutoCAD documents.*

The proposed system is able to perform full text searches on Microsoft Office, AutoCAD and MicroStation document types.

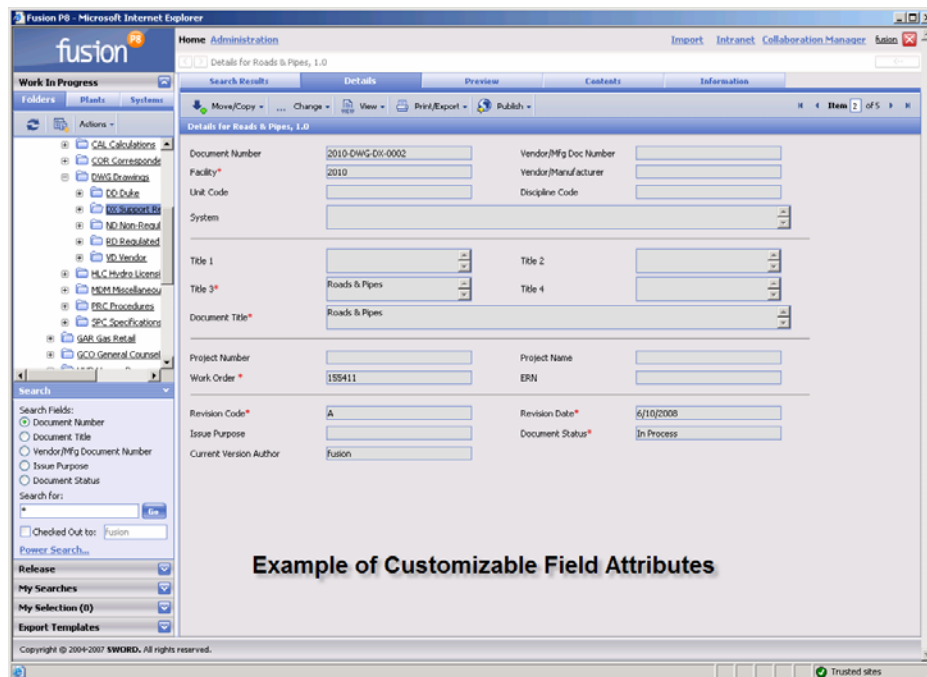
38 *Where applicable, the proposed system shall display "thumbnail" views of documents to aid in the search process. This shall include (but not be limited to) MicroStation, and AutoCAD document types.*

Sword Fusion allows the user to preview the contents of a document when searching for documents. This supports AutoCAD and MicroStation document types.

39	<i>The proposed system shall provide the capacity for folder or “project” level attributes that can be inherited at the document level.</i>	When adding new documents to the database the system is able to dynamically create the folder structure based upon the document attributes.
----	---	---

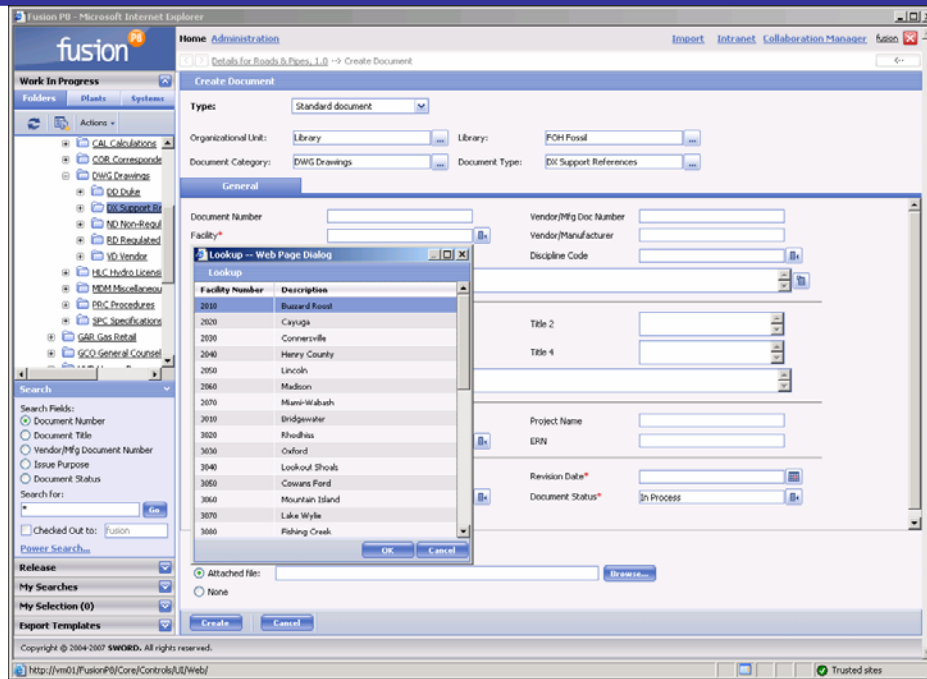
40	<i>The proposed system shall provide the capacity for custom document attributes, to be defined by the System Administrator</i>	The proposed system support customer defined document classes with each class supporting custom document attributes.
----	---	--

Sample Attributes, can be defined by the System Administrator



41	<i>The proposed system shall provide the</i>	Default values can be configured.
----	--	-----------------------------------

Question #	Question	Answer
	<p><i>capacity to further define custom attributes by:</i></p> <ul style="list-style-type: none"> • <i>Providing default values based on system attributes, or administrat or defined values.</i> 	
42	<i>Limiting users to a defined list of choices</i>	Lookup drop down lists can be configured
43	<i>Forcing formatting options (such as upper case)</i>	Formatting such as lower/upper case can be configured via the user interface forms.
44	<i>Determining the value list for an attribute based on the value chosen for another attribute</i>	<p>When using lookup lists, the value from one list can be used to determine the list of values in another list.</p> <p>Sample Pre-Defined Attribute Selection, Not Limited to Single Fields</p>



45 *The proposed system shall provide the capacity to automatically index documents based on their Windows/Operating System level file properties.*

The proposed system is able to support this type of indexing behavior but configuration will be required to ensure it works in the Connecticut DOT environment.

45 *The proposed system should provide the capacity to save searches, and execute them again with minimal effort on the user's part*

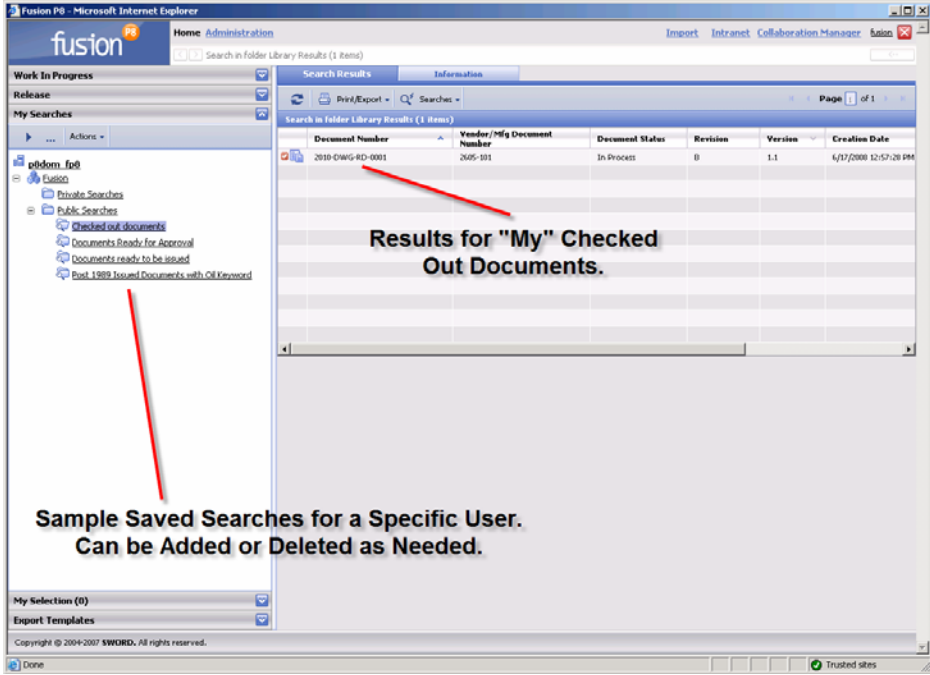
Sword Fusion allows the user to create saved searches and then simply click on the search for it to be executed.

Question #	Question	Answer
------------	----------	--------

46 *The proposed system should provide the capacity for both global (visible to all), and personal saved searches.*

The permissions of a saved search may be configured to determine their accessibility.

Sample Saved Searches



47 *The proposed system should provide the capability to generate indexes based on CAD file content. More specifically, features on a drawing or map should be indexed against the file, and available for subsequent search operations. As an example, one might*

The proposed system is able to reference metadata within the CAD drawing content in order to generate index values when indexing into the FileNet database. Also full text retrieval based upon textual content of the CAD drawing will allow users to locate the drawing based upon its contents.

Question #	Question	Answer
------------	----------	--------

*need to know on
which drawing(s) a
particular
transformer
appears.*

Question #	Question	Answer
------------	----------	--------

Geospatial Referencing / Indexing

48

In addition to traditional document indexing, the proposed system shall provide support for Geospatial referencing/indexing. More specifically, the system should provide the capacity to display documents on a map view, in addition to the traditional file list view.

- *Geospatial Map views – The proposed system shall provide the capacity to configure a background map on which to display coordinate aware documents. Coordinate aware documents should be displayed as polygons, or alternately as pushpins*
- *Non-geospatial documents – For display of documents that are not*

The proposed system would support the storage of coordinate locations as part of the metadata. The proposed system does not support a map view with documents being displayed based upon their geospatial position on the map. The proposed system does not support finding a document based upon its geospatial position (i.e. find all document within a mile of this geospatial position).

We would propose to work with Connecticut DOT on these requirements and see if they can be added as customizations within this project but are added to the next release of the Sword Fusion product (subject to product management approval).

Question #	Question	Answer
------------	----------	--------

coordinate system aware (typically Office documents), the proposed solution should provide a means of adding geospatial reference information in order to properly display the document on the map view.

- *Coordinate Systems – In support of the map view, the proposed system should provide support for those coordinate systems in common use throughout North America. In addition, the solution should be able to transform documents between coordinate systems on the fly in order to properly display on various*

Question #	Question	Answer
------------	----------	--------

background maps.

- Geospatial Searches – In addition to traditional metadata-based searches, the proposed system should provide the capacity to search for documents based on their geospatial location.*
- Map View Re-symbolization – When documents are displayed as polygons on the map view, the system should provide the capacity to re-symbolize the polygons (change the color) based on other metadata.*

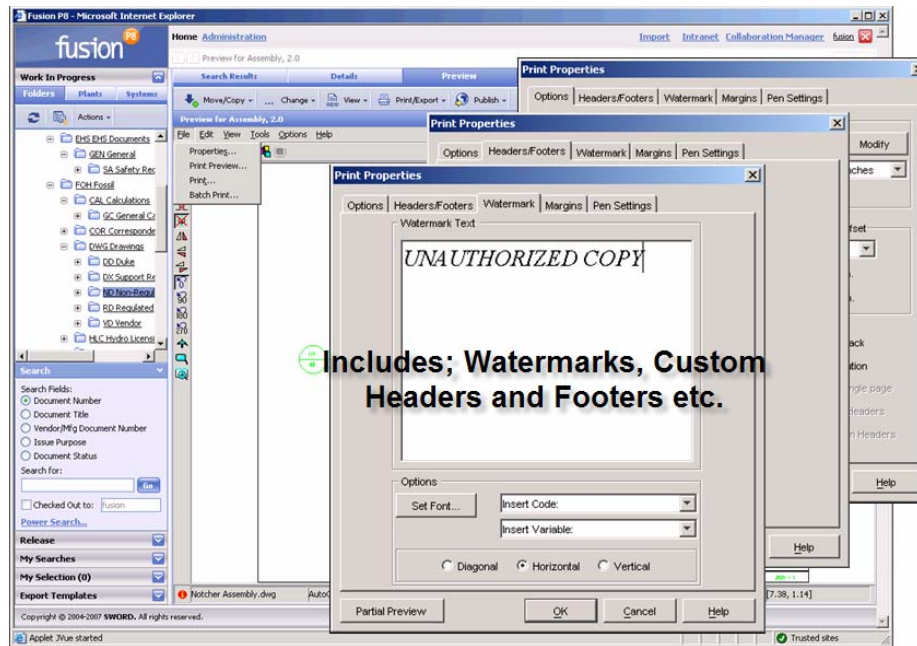
Batch Plotting / Automation

49 The proposed system should support batch printing of engineering drawings/maps. Batch printing support should include (but not be limited to) the following functions:

- The proposed system shall provide integration with the MicroStation batch plotting engine for output to paper drawings, or PDF files.

The proposed system will be configured to support integration with InterPlot for batch printing.

Sample Internal Batch Printing Screen



Includes; Watermarks, Custom Headers and Footers etc.

50 The proposed system shall provide integration with the Bentley Digital InterPlot

The resultant output files and control files from InterPlot can be stored in the database. The proposed system will be configured to support integration with InterPlot for batch printing.

Question #	Question	Answer
------------	----------	--------

production plotting solution for output to paper drawings, or output to PDF files. InterPlot integration should include support for InterPlot Organizer, Design Scripts, Settings files, and color tables.

51

The proposed system should support automated plotting processes based on document, or project milestones. More specifically, the system should support automatic generation of paper drawings, or PDF files at specified workflow events. PDF files created at project milestones should be tagged with

The automatic generation of paper drawings or PDF files based upon specific document lifecycle events can be supported but will require Connecticut DOT specific configuration. The automatic tagging with metadata from CAD document will also require specific configuration.

Question #	Question	Answer
------------	----------	--------

metadata from the original native format CAD document.

Question #	Question	Answer
52	<p>Web Access</p> <p><i>The proposed system shall provide the capacity to access the content management repository from a Web browser, for only those projects they have been granted access for. Web access shall include (but not be limited to) the following functions:</i></p> <ul style="list-style-type: none"> • <i>New Documents – The proposed system shall provide the capacity for web users to create/upload new documents</i> 	Sword Fusion allows users to add new documents to the database.
53	<p><i>View/Edit Document metadata – The proposed</i></p>	Sword Fusion allows user to view and edit standard / customer defined metadata associated with documents.

Question #	Question	Answer
------------	----------	--------

system shall provide the capacity to view and/or edit document metadata, both standard and that defined by the user organization

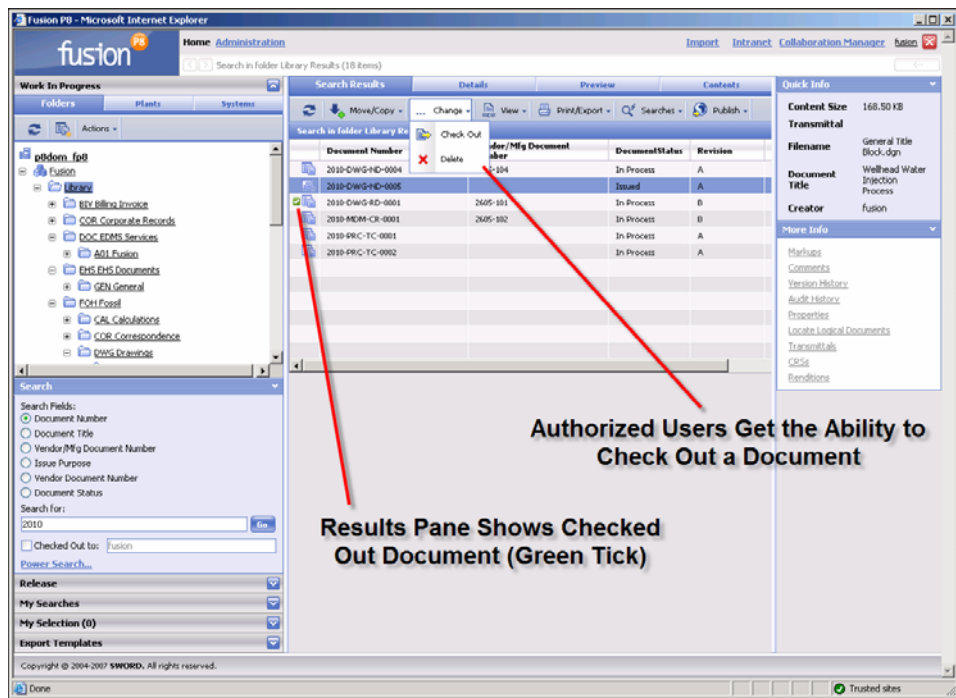
54	<p><i>Searches – The proposed system shall provide the capacity for web users to execute interactively defined searches, as well as previously saved searches. This should include metadata based searches, as well as full text searches, and component-based searches and provide results for only the data they are authorized to view.</i></p>	<p>Sword Fusion allows user to perform Quick, Power and full text searches. The results of the searches will take into account the access control rules that have been configured and will limit the documents listed in the search results.</p>
----	--	--

Question #	Question	Answer
------------	----------	--------

55 Document check out/in – The proposed system shall provide the capacity for web users to check out/in simple (non-compound) documents.

Sword Fusion allows users to check out and check in documents.

Sample Checked Out Documents Screen (below)

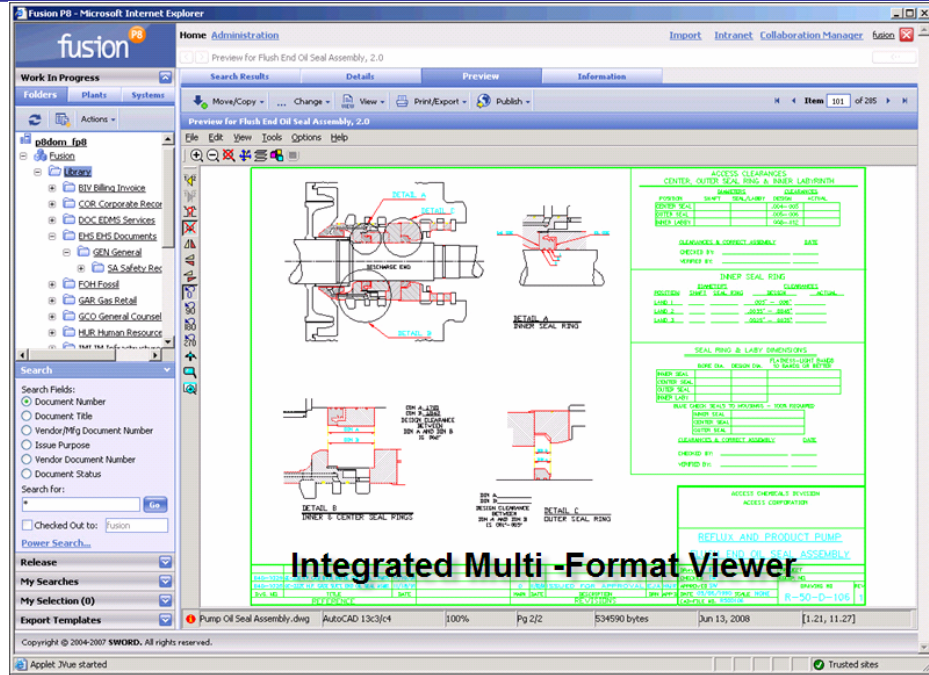


56 CAD Viewing – The proposed system shall provide the capacity for users to view CAD document types (DGN and DWG files) without having viewing technology.

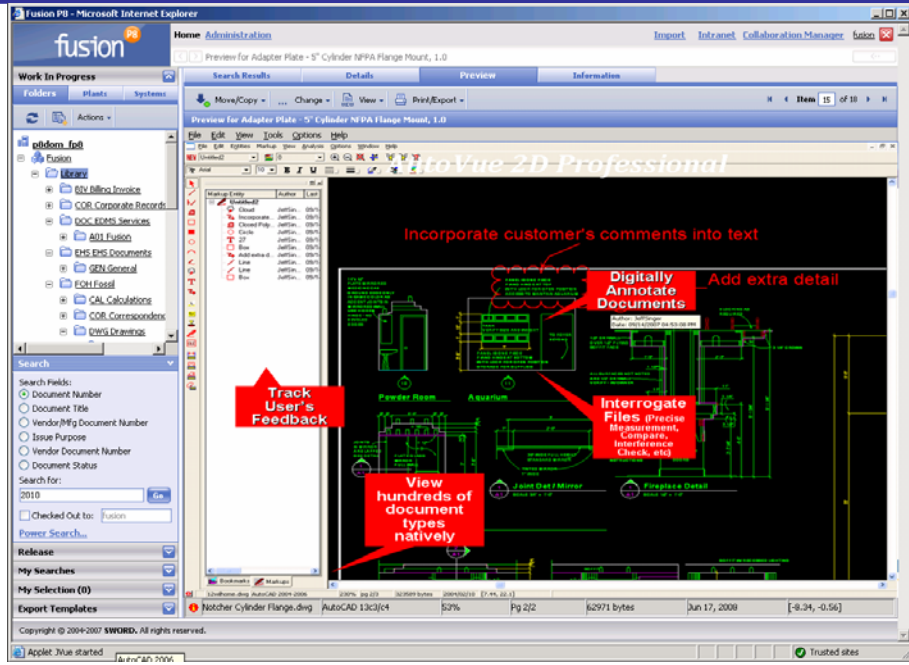
Sword Fusion allows users to view CAD drawings without requiring the drawing files to be downloaded to their workstation. The viewer allows the user to zoom and pan around the drawing without loss of resolution. The user can display multiple versions of the same drawing.

Sample CAD View Screen (below)

Further, the viewing technology should provide the capacity to zoom in/out without loss of resolution. Lastly, the viewing technology should provide the capability to display multiple versions of the same drawing and highlight changes between versions.



Question #	Question	Answer
57	<p>Redlining/Commenting</p> <p><i>In support of the engineering review process, the proposed system shall provide commenting tools for common engineering drawing/map formats. Redlining functionality shall include (but not be limited to) the following:</i></p> <ul style="list-style-type: none"> <i>Non-intrusive commenting for MicroStation DGN and AutoCAD DWG format files. Non-intrusive commenting involves integrating with redline applications that create new files in which to store user comments.</i> 	<p>The proposed system allows redlines to be created for MicroStation and AutoCAD drawings. The redlines created do change the drawings in any manner – they are stored as separate objects in the FileNet database.</p>
58	<p><i>The proposed system should support non-intrusive commenting via an installed/integrated desktop application (thick-client approach), as well as from a web browser (thin-client approach).</i></p>	<p>The redline tool is supported from the Sword Fusion web client.</p> <p>Sample Redlining Tool Screen (below)</p>



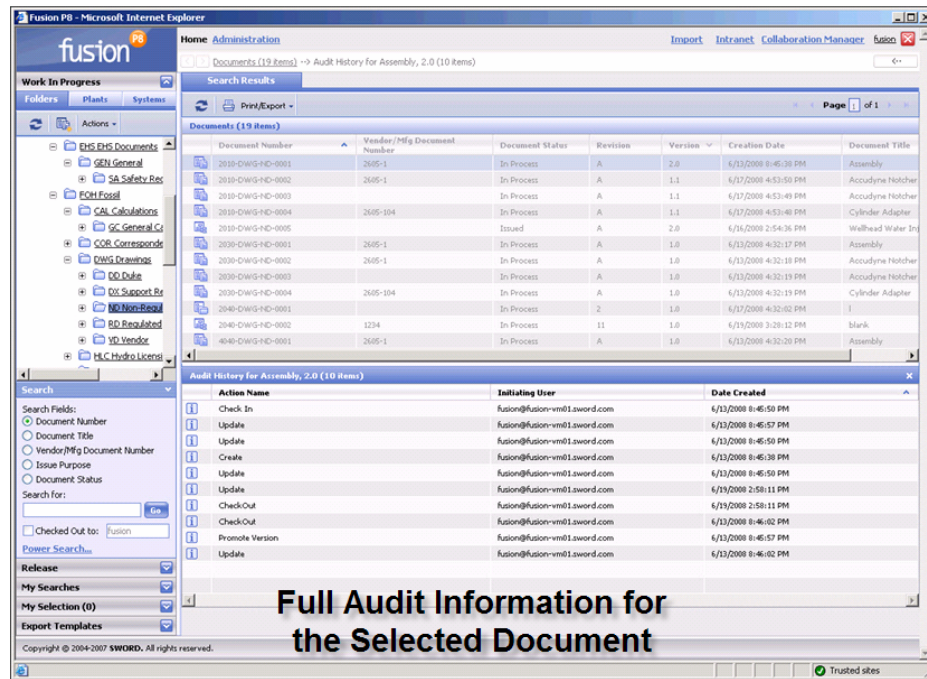
Question #	Question	Answer
59	<p><i>Integration with Existing Systems</i> <i>The system should be capable of integrating with the existing systems:</i></p> <ul style="list-style-type: none"> <i>a. CORE Project Costing</i> <i>b. SYS – Bridge Safety Report Database</i> <i>c. Traffic Signal Intersection Database</i> <i>d. Possible Legacy PCMS Data</i> <i>e. Financial Obligation Plan – Database</i> <i>f. AASHTO Trns*Port</i> 	<p>The proposed system has very flexible integration tools that can support different types of integration dependant on the requirements for each existing system. In many cases the ability to create a Uniform Resource Locator (URL) that makes reference to document(s) in the database can provide a simple method to integrate and this can be accomplished by Connecticut DOT IT personnel.</p>

Question #	Question	Answer
	<i>Security/Auditing/Backup's and Recovery</i>	
60	<i>The proposed system shall provide security on an individual basis through "roll" definition. Users will be set up to be able to read and/or write to only those files required for them to process their work, both at the discipline level and individual projects.</i>	The security rules are established and configured in FileNet content management infrastructure and not through the Fusion application layer. The FileNet security can be configured at the user or role level in order to control access to specific documents.
61	<i>Further breakdown of security shall be required during the electronic workflow routing. Based on status of document and type, the security of the document automatically changes. Security must allow either specific users access or groups to read/write/print or deny access based on status.</i>	The FileNet system supports different workflow lifecycle stages of a document and this can also be used to determine the security access for documents in the database.
62	<i>System will allow individual files to be password locked as well as specific folders where necessary to help prevent unauthorized access.</i>	The proposed system does not support assigning passwords against specific documents and / or folders. The system allows the customer to assign security permissions against specific documents and folder to control access to the information.
63	<i>Password for such security of files and folders must be able to be assigned and administered at discipline level with ability for system security administrators to delete password should it be forgotten.</i>	The proposed system does not support assigning passwords against specific documents and / or folders. The system allows the customer to assign security permissions against specific documents and folder to control access to the information.

64 *Audits must be created when user 'checks out' and 'checks in' document. Showing on audit should be (but not limited to) date and time stamp, user name, if document was changed and computer number (IP address?).*

The proposed system creates an audit log when documents are checked out and checked in. The system retains information about the user id, date / time and the identity of the document.

Sample On-Line Auditing Screen



65 *For files that have sensitive data, audits must also be written when document is read and/or printed. In these instances, an*

The system is also able to record audit entries for documents when retrieved and printed.

Question #	Question	Answer
	<i>export to local drive is not permitted.</i>	
66	<i>Reporting capabilities on audit stored information by (but not limited to) user name and date parameters.</i>	The customer is able to create reports based upon audit information that is stored in the database and logs.
67	<i>System must have automated daily backup capabilities as well as ones that can be administered on demand. This includes both full system back up or individual folders/files.</i>	The system has been designed to integrate with the Connecticut DOT existing backup and recovery tools and processes. The underlying database managed by the system is stored in a relational database and on standard file systems and hence will be applicable to existing backup / recovery tools.
68	<i>Recovery also should allow full system recovery as well as individual folders/files and allow choice on</i>	The system has been designed to integrate with the Connecticut DOT existing backup and recovery tools and processes.

Question #	Question	Answer
------------	----------	--------

version of files.

Question #	Question	Answer
------------	----------	--------

69

System shall provide mechanism for electronic routing of document or group of documents. When a document(s) is completed at one stage, its status changes. Automatic notification of individual or project can be set up as well as having document(s) sent to a specified folder, based on state.

The proposed system supports the management of the lifecycle status of documents throughout their entire lifecycle. The system can be configured to automatically send emails when documents migrate from one life cycle stage to another. The email notifications can be used to route documents throughout their lifecycle to different people in the organization.

The proposed system also has an optional module called Fusion Collaboration Manager (FCM) that supports the automated review and approval of documents (or packages of documents). This module leverages SharePoint to allow Connecticut to optionally open up document centric processes with their contractors and vendors.

2. Cost Structure

To assist in the cost estimate development, the below tables offer ballpark user #'s and location information assuming a full production system was in place.

DOT Main Office – High Band Width – (Sword Fusion Needed)

	<i>Actual</i>	<i>Projected Concurrent</i>
<i>End User Count</i>	1000	460

District Offices (5) – Low Band Width (Sword Fusion Needed)

	<i>Actual</i>	<i>Projected Concurrent</i>
<i>End User Count</i>	320	140

Research Lab – High Band Width (Sword Fusion Needed)

	<i>Actual</i>	<i>Projected Concurrent</i>
<i>End User Count</i>	60	20

Engineering Records – Low Band Width

	<i>Actual</i>	<i>Projected Concurrent</i>
<i>End User Count</i>	10	2

Const. Trailers – Low Band Width – Various Locations

	<i>Projected Actual</i>	<i>Projected Concurrent</i>
<i>End User Count</i>	60	10

Consultant Engineers – Low Band Width – Various Locations (Sword Fusion Needed)

	<i>Projected Actual</i>	<i>Projected Concurrent</i>
<i>End User Count</i>	250	30

IBM - FileNet Pricing

IBM ECM software, license users based on Authorized Users. For 1,700 users, the list price for the software and 12 months of support is \$699,750. This would include all your environments, development, test, production and high availability along with toolkits for the API's.

This software is priced at list for discussion and budgetary purposes. Discounts can be applied once we determine the interest level, time of purchase and quantity of purchase.

The installation of these products will range from \$50K - \$100K depending on the number of environments you request to be installed.

Education for Administrators and Developers will range in the \$30K area and again depends on the number of Administrators and Developers you want to train.

SWORD Pricing

Software

Total users requiring Sword Fusion – 1630

The Fusion web client license is for the Fusion application. The Fusion CAD Connector is just for the users that want Fusion integrated directly into their CAD application – this is typically a small subset of total users. We have assumed 100 users will require Fusion CAD Connector. The pricing also includes licensing for the document viewing / redline tool – we have provided pricing for Brava Enterprise based upon a 1 hour concurrent pricing model (i.e. after one user finishes using the tool the next user needs to wait an hour before that license is returned to the pool).

Mfg	Type	Part #	Item	Qty	Disc	Unit Cost	Total Cost	Maint. Cost
Sword	License	FUWC-R	Fusion User Registered License	1630	80%	\$ 120	\$ 195,600	–
Sword	Maint	FUWC-R-M	Fusion User Maintenance	1630	80%	\$ 24	–	\$ 39,120
Sword	License	FUCC-R	Fusion CAD Connector Registered License	100	30%	\$ 350	\$ 35,000	–
Sword	Maint	FUCC-R-M	Fusion CAD Connector Maintenance	100	30%	\$ 70	–	\$ 7,000
Sword	License	FUBV-1H	Brava Enterprise – 1 Hour Concurrent License	200	30%	\$ 315	\$ 63,000	–
Sword	Maint	FUBV-1H-M	Brava Enterprise Maintenance	200	30%	\$ 63	–	\$ 12,600
Sub-Total							\$293,600	\$58,720

Professional Services

We have quoted below for standard Fusion installation (assuming FileNet P8 already installed). We have estimated standard Fusion configuration (i.e. different document classes, forms, etc.) based upon an assumption of 5 document classes. We then made an estimate based upon the questions that require some level of customization for the end solution. We have included some services for Fusion P8 admin and Fusion P8 train the trainer Training courses.

Mfg	Type	Part #	Item	Qty (hrs)	Disc	Unit Cost	Total Cost
Sword	Services		Fusion P8 Installation (QA & Prod. Environments)	100	25%	\$ 150	\$ 15,000
Sword	Services		Fusion P8 base configuration (5 document classes)	240	25%	\$ 150	\$ 36,000
Sword	Services		Customization Services (Batch Indexing, InterPlot interface, Indexing Windows properties, geospatial referencing, lifecycle triggered email notifications, Integration 6 IT systems using URL mechanism)	640	25%	\$ 120	\$ 76,800
Sword	Services		Fusion P8 Admin and User (train the trainer) training	120	25%	\$ 150	\$ 18,000
Sword	Services		Project Management (Initial project schedule, mgt plan, 1 day per week over 20 elapsed weeks)	200	25%	\$ 180	\$ 36,000
Sub-Total							\$181,800

Appendix C – Michigan DOT FileNet vs. ProjectWise Comparison

EMAIL Correspondence from Michigan DOT

Eric,

Long story that I will try to make short. They set FileNet as our enterprise standard. We were able to prove that it did not work for CAD. About that time they announced that Pwise worked with FileNet. We were then able to get Pwise. Pwise semi-automatically exports information to FileNet. It did not work the other direction. We had the interface from Pwise to FileNet set up and operational. Since then FileNet has fizzled out. Due to our enterprise agreement we have unlimited use of Pwise where FileNet we had to buy licenses to use it. Pwise does not encrypt documents like FileNet does so we were able to develop internal applications that use the Pwise back end database. This makes it cheap and quick to get things accomplished. Tried this with FileNet but with encryption you had to use their software for everything and support was not the greatest. As a result we are getting request to use Pwise for Fleet and Human Resource applications. So far we have resisted because we do not have the resources to support more applications.

Attached is a report we did a while back. Hope this answers some of your questions. Feel free to call for more information.

Daniel J. Belcher, P.E., P.S.
MDOT - Design Division
Engineering Support Services
517.335.2182
belcherd@michigan.gov

>>> "Bergeron, Eric S." <Eric.Bergeron@po.state.ct.us> 4/22/2008
12:59PM >>>
Hi Dan,

Eric from CTDOT here. I did a google search and noticed Michigan DOT may be using FileNet in addition to PW in some areas.. We are hitting a little bit of a cross-roads here between our IT Global Agency (DOIT) pushing IBM-FileNet, yet we are on Master Agreement with Bentley for ProjectWise. Does Michigan use PW on an Enterprise level or mainly just for Engineering Data?. Did your PW implementation run into any of these issues? We are just trying to justify why we need PW instead of FileNet..

Thanks for your help,
Eric

EDMS Project - Software Testing
FileNET Panagon, Green Pasture G5, Bentley ProjectWise
EVALUATION REPORT

Methodology:

The EDMS project plan included a series of tasks for preparation and testing of selected software. These tasks began with development of performance factors, or criteria, during the business and technical requirements analysis portion of the project. From these performance factors, test scripts were developed. Once the software had been selected, it was installed, configured, and formal training sessions held. A 3-phase testing method used comprised of: 1) configuration testing, 2) structured testing (vendor demonstrations of their software on MDOT's system), and 3) ad hoc, or user, testing.

Software tested:

FileNET Panagon - Content Services for repository, document sharing, and document management
eProcess and eForms for workflow
Web Services for web access
Green Pasture - G5 for CAD file management
Bentley - ProjectWise for CAD file management

Ad hoc testing took place during May, 2002, and was conducted by the following:

Design Division:

Don Reed
Harold Hovey
Stephanie Doherty
Steve Driver

Real Estate Division:

Teresa Vanis
Gary Rittenburg
Forest Kraus

OIM:

Sue Shulick
Tom Franklin
Cowen Mwakanandi
Dave Hundt
Julie Gee

FHWA:

Don Bullock
Vershun Tolliver

Transportation Planning:

Paul McAllister
Tom Hanf

Software Recommendation:

FileNET Panagon - Content Services, eProcess, eForms and Web Services
Bentley ProjectWise - CAD file management

The Bentley product was selected for it's ease of use, simplified bulk loading capability, integration with email (GroupWise), ease of user and administrative interface, and error free performance.

Test Results:

Configuration Testing:

Database - All three products, FileNET Panagon, Green Pasture G5, and Bentley ProjectWise, were verified compatible with Oracle. The capability for reading from and writing to an existing Oracle database will be tested during the Environmental Review workflow pilot.

eMail (GroupWise) - Both FileNET Panagon and Bentley ProjectWise worked with the GroupWise mail system for user notification on various tasks and document transitioning. However, we were unable to drag and drop email from GroupWise into the FileNET repository. In order to save an email to the repository it was necessary to first save it to the desktop and then to the repository. Although Green Pasture claimed to be integrated with GroupWise, they were unable to connect G5 to GroupWise for testing.

Servers and Network - Basic server setup and configuration was standard and issue-free. Once installed and configured, all three applications have pretty much been stable and performed as advertised. Several different configurations were tested and almost all issues encountered were resolved by working hand in hand with the appropriate technical personnel.

Distributed file storage, user ID synchronization and authentication, scanning of paper documents to digital, back file conversion, and volume/load testing will be performed during the Environmental Review workflow pilot.

FileNET Panagon with G5 and ProjectWise: tested by Design Division

Note: Factors #2 was removed from testing as requirements for this project.

PERFORMANCE FACTOR	SCORE for G5	SCORE for PW	COMMENTS
Design #1 - ability to import CAD engineering drawing files and meta data (system indexing, e.g. date created and who created it)	<input checked="" type="checkbox"/> Pass - <input type="checkbox"/> Fail	<input checked="" type="checkbox"/> Pass + <input type="checkbox"/> Fail	Score is based on ease of use.
Design #3 - ability to set up engineering drawing file folders and states, e.g. draft, preliminary, final	<input checked="" type="checkbox"/> Pass - <input type="checkbox"/> Fail	<input checked="" type="checkbox"/> Pass + <input type="checkbox"/> Fail	Score is based on ease of use.
Design #4 - ability to add participants and documents to a project (user and document security)	<input checked="" type="checkbox"/> Pass - <input type="checkbox"/> Fail	<input checked="" type="checkbox"/> Pass + <input type="checkbox"/> Fail	Score is based on ease of use & intuitiveness of the software.
Design #5 - robustness of Library Services applicable to MicroStation files, e.g. ability to store and access engineering drawing reference, view, checkin, check out, version, restrict security	<input checked="" type="checkbox"/> Pass - <input type="checkbox"/> Fail	<input checked="" type="checkbox"/> Pass + <input type="checkbox"/> Fail	Score is based on ease of use (crash/relogin) & friendliness of the GUI
Design #6 - ability to customize look and, e.g. display based on filters or security	<input checked="" type="checkbox"/> Pass - <input type="checkbox"/> Fail	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	Score is based on ease of use (GUI).
Design #7 - ability to access project files and meta data without Panagon with G5 or PW mediation, e.g. emergency procedures if system is down	<input type="checkbox"/> Pass <input checked="" type="checkbox"/> Fail	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	G5 file names are encrypted; PW are not.
Design #8 - miscellaneous factors derived from previous user experience, e.g. plot groups of drawings. Note: Integration with IPLOT is critical to this project.	<input type="checkbox"/> Pass <input checked="" type="checkbox"/> Fail	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	G5 does not work with MDOT plotting software IPLOT).
Design #9 - create and utilize distributed file storage areas Note: To be tested during development.	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	

FileNET Panagon: tested by Real Estate Division

Note: It was hard to view attachments at the bottom of the screen (on workflow form) without changing Desktop properties and it was sometimes hard to open the eform signature box in the workflow. System was too slow (too much lag time). Factors #3, #10, #11, #12, #13, #15, and #16 were removed from testing as requirements for this project.

PERFORMANCE FACTOR	SCORE	COMMENTS
Real Estate #1 - ease of scanning and indexing relevant paper documents Note: To be tested during development phase of Environmental Review workflow	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	
Real Estate #2 - read and write data to a Real Estate database, e.g. ReSale Note: To be tested during development phase of Environmental Review workflow	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	
Real Estate #4 - ease of designing and developing process workflow definitions	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Real Estate #5 - ease of adding an ad hoc participant to a process workflow	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Real Estate #6 - ease of tracking progress of a process workflow instance	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Real Estate #7 - engineering drawing creation collaboration from remote site, e.g. markup Note: CAD file management tool will come with viewer for non-CAD users to view engineering drawings and the drawings will also be stored in a format viewable by the IDM viewer. Also, markup will be available.	<input type="checkbox"/> Pass <input checked="" type="checkbox"/> Fail	Able to search and find drawing (.dgn file) but unable to view using IDM viewer.
Real Estate #8 - mechanism for associating documents to one another in a named "document folder"	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Real Estate #9 - mechanism for setting and enforcing security on documents and folders	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Real Estate #14 - mechanism for designing and using electronic forms, e.g. with workflow	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

FileNET Panagon: tested by Transportation Planning - Environmental

PERFORMANCE FACTOR	SCORE	COMMENTS
Environmental #1 - ease of designing and developing process workflow definitions	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Environmental #2 - ease of launching a process workflow	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Environmental #3 - ease of tracking the execution of a process workflow, e.g. adhering to deadlines, as well as ability to attach and organize documents in various file formats	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Environmental #4 - ease of tracking progress of a process workflow instance	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Environmental #5 - ease of distributing process workflow based on identified criteria, as well as affixing authorization, e.g. passworded signatures and dates	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

FileNET Panagon: tested by Federal Highway Administration

Note: Factors #8 and #10 were removed from testing as requirements for this project.

PERFORMANCE FACTOR	SCORE	COMMENTS
Cross Functional #1 - ease of adding, deleting, and modifying users from an existing MDOT directory information base, (synchronize and authenticate) Note: To be tested during development prior to production.	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	
Cross Functional #2 - ease of adding participants to a process workflow	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Cross Functional #3 - ease of assigning tasks to participants	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Cross Functional #4 - ease of importing existing desktop documents into FileNET repository	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Cross Functional #5 - ease of importing meta data (document indexing) into FileNET repository	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Cross Functional #6 - interface to functions in standard MDOT desktop productivity tools, e.g. add to repository, set security, version, checkin, checkout, markup	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Cross Functional #7 - interface to existing electronic mail software environment (GroupWise) (add document, revision, version, create user profile, checkin and checkout, markup, set security)	<input type="checkbox"/> Pass <input checked="" type="checkbox"/> Fail	Unable to save documents directly to repository from GroupWise. Had to copy to desktop and then add to repository.
Cross Functional #9 - ease of capturing images and entering meta data for the back file of paper documents	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	See Design #1 and #2
Cross Functional #11 - ease of designing and developing process workflow definitions	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Cross Functional #12 - ease of launching a process workflow	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	See Environmental #2
Cross Functional #13 - ease of tracking progress of a process workflow instance	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Cross Functional #14 - ability to create and update a simple and complex search or query	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	

Cross Functional #15 - ability to create complex project spaces (documents, folders, workflow, security, queries)	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail	
Cross Functional #16 - ability to handle large volumes documents and transactions Note: To be tested during development prior to production.	<input type="checkbox"/> Pass <input type="checkbox"/> Fail	

Correspondence Management Factors were not tested. However, these factors map to factors that were tested, such as designing, processing, and tracking workflow, scanning and indexing, assigning participants, document creation collaboration (through workflow), setting up and running searches or queries. OCR scanning and keyword searching will be tested during design and development of the Environmental Review process workflow.

Web Information Portal Factors will not be tested until software is located that can provide the required functionality.

PROJECTWISE and FILENET

- Document storage repository
- Repository security
- Version control
- Document sharing
- Document search and retrieval
- Document life cycle management
- Document sharing with external partners
- Web enabled access
- Thick client (desktop loaded software)
- Thin client (Internet Explorer accessible)





ProjectWise

- **Basic user-thin client (basic web access)**
- **Complex workflow configuration (separate software module)**
- **File encryption**
- **Centralized storage of business documents**
- **Basic user-thick client (basic desktop access)**
- **Simple state to state workflow configuration (standard package)**
- **No file encryption**
- **Distributed drawing storage for decentralized staff**



ProjectWise

- **No CAD file associations**
 - **Direct document scan to repository**
 - **Software target – business document management**
 - **2,000+ user estimate**
- **Automatic association of CAD reference files**
 - **Scan document to desktop then add**
 - **Software target – Engineering document (CAD) management**
 - **1,000 user estimate**

CMDOT

DIFFERENCES



- **Electronic forms (separate module)**
- **eMail system integration for workflow task link (not email system specific)**
- **Standard integration with FileNet products, e.g. eProcess, eForms**

ProjectWise

- **No electronic form capabilities or tool**
- **Software contained eMail (not integrated with other systems e.g. GroupWise)**
- **Standard integration with Bentley software products, e.g. Geopoint, MicroStation**