ASPOSE
Your File Format Experts

CASE STUDIES

Aspose.Words and Aspose.Cells Case Study

PQC Case Study

Using Aspose Words and Aspose Cells to convert Word, Excel documents used in construction quality control process into read-only PDF files with Watermarks.

Scott L. Deaton, Ph.D. – President, Dataforensics, LLC – June 16, 2011

About Dataforensics

Dataforensics is a privately owned software company that provides integrated software solutions to improve field data collection, data management and follow-on analysis for facilities and infrastructure. Client users include engineers, geologists/hydrogeologists, contractors, and infrastructure assessment experts. These individuals work for private design and construction organizations as well as government agencies. They use Dataforensics' software products to develop, synthesize and manage extensive amounts of information related to inventory and condition, as well as the characteristics and performance of existing and planned facilities and infrastructure. This data is used to support planning decisions related to design, construction, quality control, vulnerability, damage assessment, and asset management. Dataforensics software products help users save time and resources while improving the quality of the information available for their critical planning and design activities.

Problem

Dataforeniscs needed an Enterprise capable PDF generation engine. It would need to be able to convert Word, Excel, and Open Office documents to PDF documents, combine them and create bookmarks for organization within the documents. This is a critical portion of our application to provide the complete workflow that simulates what users today would do manually without our software. This version of the software hasn't been released to our users yet, but currently we have two organizations utilizing this particular application with approximately 50 users potentially affected.

Solution

Dataforensics PQC Application utilizes Aspose to Streamline Workflow

Scott L. Deaton, Ph.D. – President, Dataforensics LLC

Dataforensics PQC application is the most advanced data management system for construction material testing data. It allows geotechnical engineering consultants and

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government agencies to have complete control over the field testing and inspection process while having real time access to the data recorded by technicians in the field. It encompasses the entire business process starting with configuration of the project, defining the related specifications through data collection, reporting, analysis, review, approval and finally transmittal of the reports to the appropriate people and organizations. It provides a single system that facilitates communication between all involved parties from field technician to professional engineers to clients to owners and to contractors.

Specifically, the system facilitates recording and reporting construction quality control data related to field density testing, concrete testing and field reports. Field reports can included a variety of purposes such as a daily field reports describing the construction activity or other special inspection reports for structural steel inspection, rebar installation inspection, foundation inspections, concrete placement, or any other report the user wants to define.

Dataforensics PQC system is unique because the field reports module is completely flexible. Companies can use existing Word, Excel or PDF based forms for inputting the data while in the field and subsequently load it into the system on the website. Screenshots of this process are shown below. First the inspector completes their document in Word, Excel, Open Office or as a PDF form. It can then be loaded directly into the PQC system as shown here where the user indicates critical metadata related to the report being loaded and then attaches the file.

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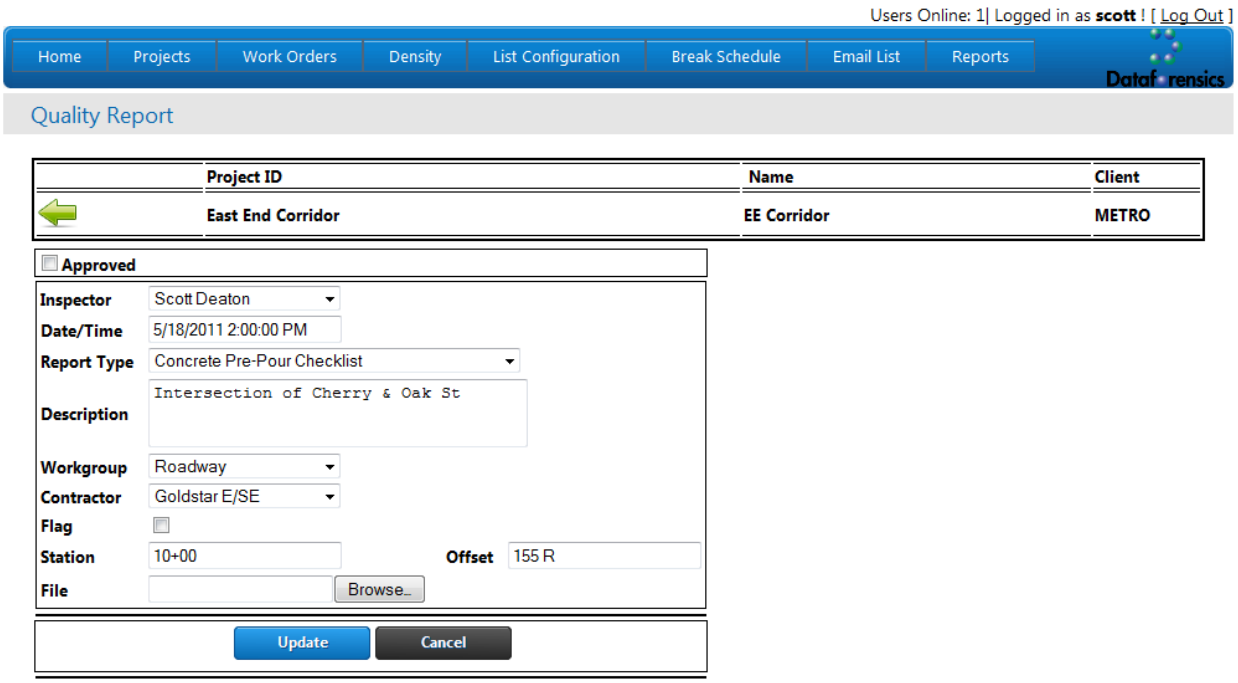

Once the report is loaded into the system, a Professional Engineer can review the reports and approve it. If the report is approved, no changes can be made to it, except by the original Professional Engineer who approved it. The approval process is shown below where the first screenshot indicates how the Professional Engineer approves the report where the click the Approved checkbox and then click the Mark Approved button. The second screenshot indicates the result of the approval process where it indicates who approved the report.

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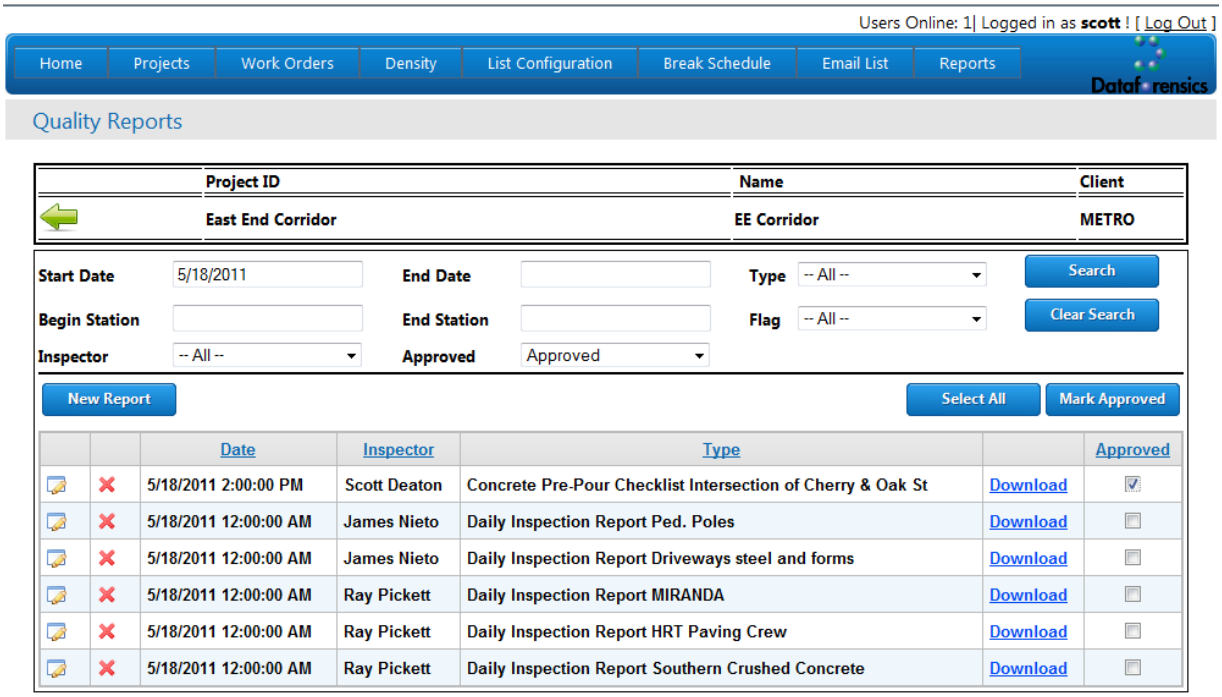

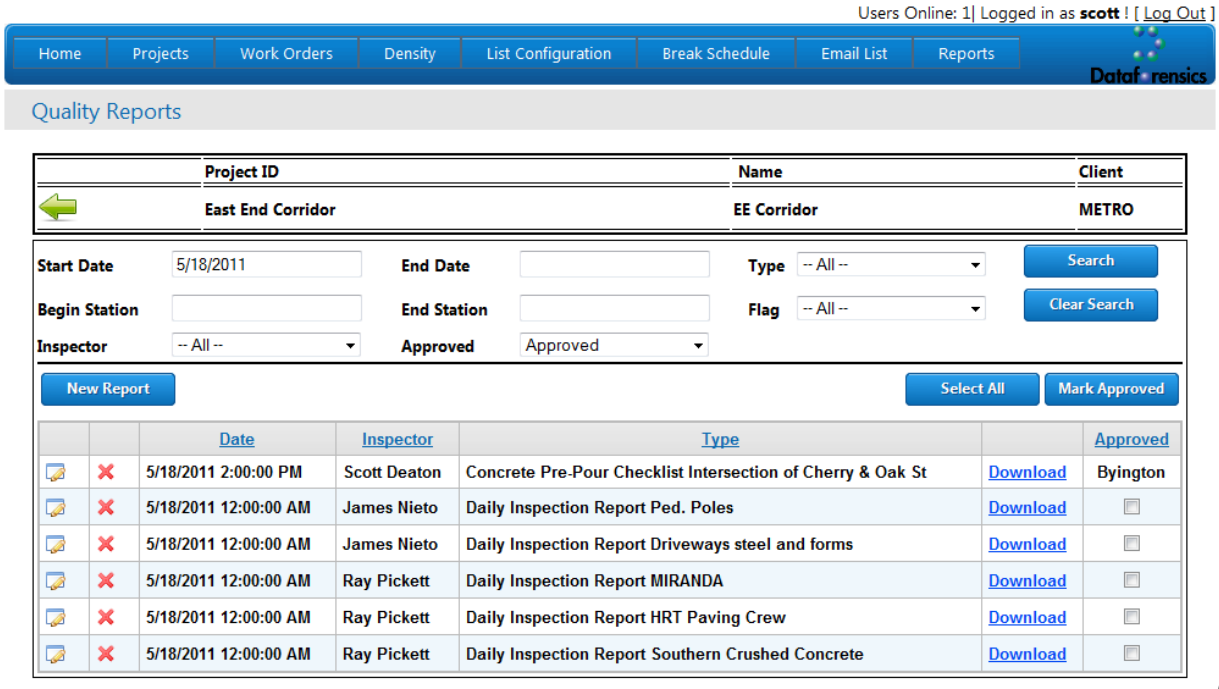

O

nce Approved, when a user accesses the report it is converted to a PDF document using Aspose.Words or Aspose.Cells and a watermark is added in the header watermark indicating

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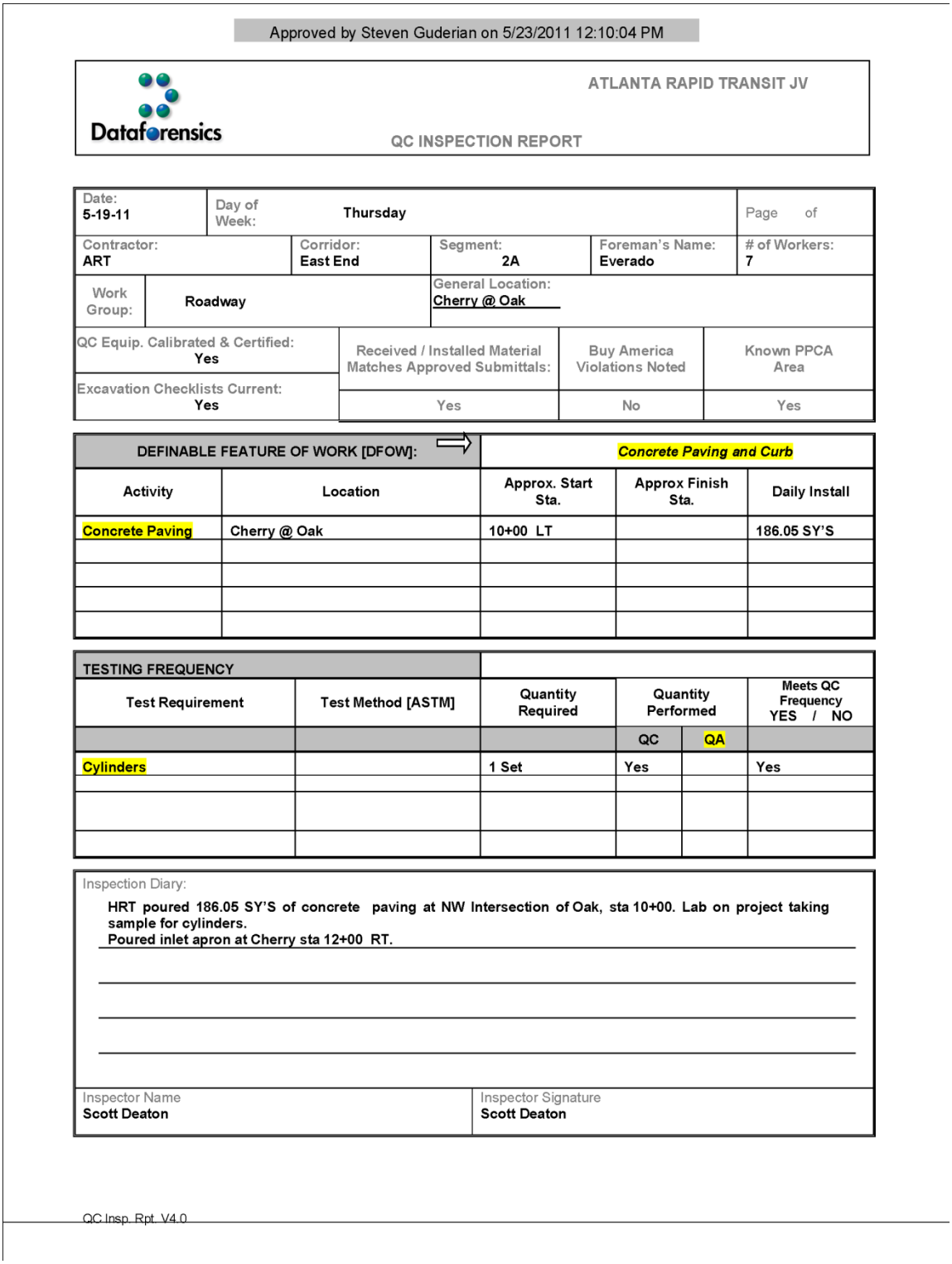
who approved the document, their title and the date it was approved. An example of the Aspose converted PDF document is shown here.



Approved by Steven Guderian on 5/23/2011 12:10:04 PM

Dataforensics

ATLANTA RAPID TRANSIT JV

QC INSPECTION REPORT

Date: 5-19-11	Day of Week: Thursday			Page of
Contractor: ART	Corridor: East End	Segment: 2A	Foreman's Name: Everado	# of Workers: 7
Work Group: Roadway		General Location: Cherry @ Oak		

QC Equip. Calibrated & Certified:	Received / Installed Material Matches Approved Submittals:	Buy America Violations Noted	Known PPCA Area
Yes	Yes	No	Yes
Excavation Checklists Current: Yes			

DEFINABLE FEATURE OF WORK [DFOW]: *Concrete Paving and Curb*

Activity	Location	Approx. Start Sta.	Approx Finish Sta.	Daily Install
Concrete Paving	Cherry @ Oak	10+00 LT		186.05 SY'S

TESTING FREQUENCY

Test Requirement	Test Method [ASTM]	Quantity Required	Quantity Performed		Meets QC Frequency YES / NO
			QC	QA	
Cylinders		1 Set	Yes		Yes

Inspection Diary:

HRT poured 186.05 SY'S of concrete paving at NW Intersection of Oak, sta 10+00. Lab on project taking sample for cylinders.
Poured inlet apron at Cherry sta 12+00 RT.

Inspector Name	Inspector Signature
Scott Deaton	Scott Deaton

QC Insp. Rpt. V4.0

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Additionally, the PQC system includes a Transmittal module that facilitates tracking and sending the appropriate reports to the relevant people and organizations. The transmittal module allows users to setup predefined templates regarding the reporting criteria such as date ranges and other filter criteria such that PDF documents can be generated and sent to the appropriate people automatically. It then also serves for tracking and managing the reports that are sent out, making this process significantly more manageable compared with current methods. These Transmittal documents may include density test results or concrete test results generated as a PDF via SQL Server Reporting Services or any of the documents from the field report module. Accordingly, when a Transmittal is generated, the PDF document for density tests and/or concrete tests must be combined with the Word or Excel documents converted to PDF documents using Aspose.Words and Aspose.Cells to create a single PDF document that can be emailed. For very large documents a link to the document can be included in the email as an alternative to attaching the document itself.

Experience

Finding a solution: During previous employment, one of our junior developers had worked with Aspose tools for document conversion. Our development team then researched the products online and compared the various solutions. Specifically, our requirements were:

- **PDF Conversion:** The ability to convert documents (Word and Excel as well as Open Office documents) to a PDF.
- **Allowed our developer to create unlimited works.** While we were searching for solutions to our immediate needs, we wanted to know that the solution could be integrated into future products. The Developer OEM license met that criteria.
- **Microsoft Office did not have to be installed on the server.** Some solutions were only printer drivers that "printed" the Office document to a PDF document but required Microsoft Office to be installed on the server. Aspose provided the standalone solution we needed.

The online reviews providing comparisons of Aspose with other products seemed to be generally more positive that other programs, so we downloaded the free trial of Aspose in order to test and develop against. Lastly, Aspose made it easy to work with them. Our development manager was able to obtain a price quote without talking to a salesperson. Some other companies would not provide a price quote and licensing terms unless we spoke

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to a salesperson. Aspose publicly posts pricing and licensing terms on their website and made it easy to work with them on the purchase.

Implementation: The implementation of our solution has been on-going for approximately 1 year. However, the portion of the system that utilizes the Aspose components only has been on-going for approximately 2 months and is nearing completion.

After downloading the Aspose.Words and Aspose.Cells assembly and adding these as references in our ASP.Net application, we found source code in the online documentation to convert a Microsoft Word document to a PDF. It simply took adding four simple lines of code to convert a document from Microsoft Word or Excel to PDF. In addition to returning non-editable PDF documents for approved reports, we knew Aspose met the requirements for future documents users would load into the system. During the implementation, we didn't need to utilize Aspose support as the implementation was so straightforward.

Outcome: We are nearly ready to deploy the update of our system to users once we finalize a couple of other features. Overall, we feel utilizing the Aspose.Cells and Words components provides a more complete solution that allows users to perform their entire business process within our application. The development time period was significantly less than using open source components or developing our own conversion tool. Aspose.Cells and Words fit the requirements for our customers to have an easy to use, reliable document conversion and compilation engine.

Next Steps

The next steps for our product are to rollout the update to our existing customers such that they have a single source, single step process for combining the various types of documents, whether Word, Excel, Open Office, or PDF, in the Daily Report document management system.

We are also investigating the possibility of using Aspose.Cells for automating reporting for another application that we currently sell as a standalone software application. As part of this new development, we are considering moving it to the software as a service, web-based model so the end users can simply login to our website process their data and generate the necessary reports without having to install any new software on their systems.

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Summary

The integration of Aspose Cells and Words for .NET into our construction quality control data management, document management and transmittal system, allows users to configure whatever type of document/report in Word or Excel or Open Office that can then automatically be converted to a PDF and combined into a single document. This provides significant efficiencies for our clients that enable them to batch process reports on a weekly basis, monthly basis and/or at the end of a project. The usability and stability of Aspose products has provided confidence to our development team about using the Aspose components for potential future development and we highly recommend Aspose products to other development teams. The only issue we have with Aspose products is that it is slightly expensive for such a small company. However, the discounts they are able to provide for testimonials, case studies, etc, certainly aids with the deployment cost.

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