

# Digital Signatures an Integral Part of the Improved Workflow at Braun Intertec

## Executive Summary

Braun Intertec, an industry leader in engineering and environmental consulting, required a digital signature solution to streamline their engineer's reporting processes. Per the standards they defined, the solution needed to be portable, and integrate with their pre-existing .NET-based data entry, testing, quality assurance, and report generation applications as part of an integrated solution set. A final goal was to reduce the organization's overall reliance on paper, pursuing a more environmentally friendly approach to business.

While the expectations Braun Intertec set for any possible solution were high, the organization was able to address its needs by deploying a single, comprehensive solution - CoSign digital signatures.

Implementation of the CoSign digital signature solution enabled Braun Intertec's engineers to use their .NET application to directly review and batch approve data, and sign multiple reports with a simple click of the mouse. CoSign's unique centralized approach for generating, storing and managing Private Keys and certificates, and its built-in integration with the organization's existing User Management System, leveraged the existing management of the organization's users without introducing new management tools. The centralized design also permitted the organization to continue focusing their resources on accomplishing business requirements, as opposed to investing IT staff for digital signature solution management.



- > **Country** - USA
- > **Industry** - Engineering
- > **Applications** - .NET application via SAPI, Microsoft Word
- > **No. of users** - 150

## Case Study

### » Introduction

Braun Intertec is a Minneapolis-based, employee-owned geotechnical engineering and environmental consulting and testing firm that has more than 300 employees located in 12 regional offices.

Previous to their decision to implement a digital signature solution, Braun Intertec had relied on a workflow process that included technicians or engineers recording the site data on paper, and then mailing or faxing that documentation to their offices. At the office, the data was entered into a Microsoft Word® document for review, approval and signature procedures. The process was time-consuming and costly, as it required the workflow to hinge on the shipping, delivery, and printing of numerous paper documents per project.

### » Business Need

A few months after Braun Intertec's decision to expedite their workflow by automating data capture from the field, the idea of automating their signing process also surfaced. Management concluded that an automated process that still relied on a handwritten signature at the end of the procedure was

Brian Hase, Director of Information Technology, Braun Intertec Corporation:

*"Including ARX's Cosign in our technology portfolio offered a payback period of 3-4 months."*

extending project schedules and increasing budgets. Additionally, the costs associated with archiving and auditing paper documentation significantly increased the organization's overhead.

Braun Intertec understood that a secure and durable electronic approval process was vital to realizing the full benefits of their investment in project efficiency. Through incorporating a digital signature into their business processes, Braun Intertec knew that it would reduce approval cycle times as well as the costs of quality assurance, handling, distributing, and archiving signed documents.

It was decided that the organization needed an electronic signing capacity that would close the final gap in their automated processes and completely eliminate the need for paper in the workflow. Moreover, this signing capacity needed to allow the organization's engineers the ability to place their engineering seals on documentation, and provide third parties the ability to verify the identity of the signer, as well as confirm the signer's intent, and the document integrity over the life of the record.

## » Key Challenges

Braun Intertec IT staff needed to create a seamless process that enabled FDC and their LIMS (Lab Information Management System), both of which are .Net based web applications, to securely communicate with the CoSign digital signature store. ARX was instrumental in helping Braun Intertec staff understand the SAPI® (Signature Application Programmers Interface) for CoSign. The Braun Intertec development staff was able to create a web service that enables secure web application access to the CoSign digital signature store.

## » Solution

With their specific requirements defined, Braun Intertec decided to implement a digital signature solution as part of the overall solution set. Digital signatures take the traditional, paper-based signature, and advance it into the digital realm. They manage this by adding a digital "fingerprint" as a signature to a document. This "fingerprint", based on Public Key Infrastructure (PKI) technology<sup>1</sup> is unique to the document and the individual signer.

An important factor in Braun Intertec's decision to implement a digital signature solution was the need for a signing technology that was portable. Braun Intertec wanted to know to know that the signing solution they utilized would arrive unaltered anywhere in the world and be easily verified without the need for complicated, proprietary, third party applications. A digital signature solution would not require third party or vendors any additional software download, satisfying a major component of Braun Intertec's standards.

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<sup>1</sup> The PKI technology in a digital signature is used to establish that the signatory is indeed responsible for the signature in the message and that the signer approves the content of the document. PKI technology is well established, with over 30 years of industry use, and is accepted as the only standard method capable of guaranteeing an electronic document has not been altered. Any changes made to the document after it is signed invalidate the digital signature, thereby protecting against forgery, ensuring non-repudiation, and securing the documentation.

After researching the options available, Braun Intertec decided that the CoSign PSF, which creates self-contained, portable, and sustainable electronic records that are maintained in a non-proprietary format, offered the solution that best fit their organizational needs. CoSign's portable format allowed Braun Intertec's collaborative workflow to become simple and fast. Moreover, as a standards-based technology, the CoSign PSF will be readable and verifiable for decades into the future.

The organization used CoSign's signature API (SAPI) to integrate the CoSign digital signature solution with their .NET application. The integration allows on-site technicians or engineers to enter data into the Braun Intertec database via an interface optimized for wireless connectivity. The solution circumvents the need for faxing or shipping paper documentation to the office. The organization's in-house Laboratory Information Management System (LIMS) application then continues the process, validating information and adding additional test information. The information is presented to the project manager and lead engineer for their review and signature authorizations. The project manager and engineer can then use CoSign to digitally sign the documents in batch mode, with a PDF output created for every file. The reports are stored in an SQL (a standard interactive programming language) database and are available to the client from any web access point in real time. This element and the batch signing capability enabled Braun Intertec to tightly integrate their solution, yet loosely couple the quality review step from the signing step so that the signing of documents was no longer a bottleneck in the overall business process.

## » Results

Because it allows for the batch signing of documentation, the CoSign digital signature solution has enabled Braun Intertec to develop a "straight-thru" process, streamlining data entry, review, signing, and delivery processes for tens of thousands of reports. CoSign also alleviates processes by eliminating unnecessary steps in their workflow, and its centralized approach to managing users makes Braun Intertec's administrative responsibilities extremely simple, allowing for IT resources to focus on other issues. Equally as important to the organization, Braun Intertec has been able to pass CoSign's benefits directly to their clients, as their engineers and project managers now have a secure and reliable digital signature solution that allows for accelerated e-delivery of the organization's test reports to its clientele. A report turnaround that once took days, with documentation traveling between a worksite and Braun Intertec's offices can now be accomplished in minutes. By signing up to 58,000 documents a year, CoSign saves Braun Intertec 2000 hours annually by eliminating the need to hand sign documents. In addition, there were immediate overall benefits in efficiency, speed, and quality control enabling Braun Intertec to see a payback period in their first 3-4 months of use.

There was even an unexpected source of savings according to Brian Hase, Braun Intertec's Director of Information Technology:

*"Our own internal ROI models show that some of the savings come from reduction in search time enabled by storing documents in an online archive that has full-text searching. Full-text searching is a common feature in most document management systems but documents that need signing are an issue - With the exception of OCR enabled solutions, scanning does not preserve the text basis of a document. Cosign, if used properly, does. We have found that all of our signed documents that use the CoSign's SAPI are fully text searchable."*

By Braun Intertec's own estimate, CoSign saves the organization over \$110,000 annually by enabling the company to reduce their paper-related expenses and index archived content.

## » Lessons Learned

The integration of CoSign at Braun Intertec highlighted several important aspects of a digital signature solution including simplicity of use, transportability, and the capacity for multiple signatures. A more detailed explanation is presented below.

- » **Avoid Complicated Solutions.** Braun Intertec employed a digital signature solution in order to achieve improved business processes. A digital signature solution that was either complicated to use, or required the organization to hire additional staff for management issues would have made things more complex and failed to achieve their goal. With the CoSign digital signature solution, Braun Intertec enjoys an elegantly simple digital signing process with no need for investing additional resources in IT or helpdesk staff.
- » **Allow Multiple Signatures Per Document.** With multiple signers per document, Braun Intertec required a digital signature solution that did not limit them to single signer documentation. CoSign's ability to place multiple signatures on a document, in addition to edit and sign a single portion of the document, allowed the organization to continue signing documentation exactly the way they did on paper.
- » **Implement a Portable Solution.** By process design, Braun Intertec's documentation is sent outside of the organization for review by their clients. A digital signature solution that could not be verified by a third party would not have been acceptable for Braun Intertec's business needs. By using a standards-based digital signature technology, CoSign produces a portable signature record for every signature it captures. The CoSign PSF™ (Portable Signature Format) that is then created enables partners, customers, and prospects to retain and verify the proof of identity, intent, and transaction integrity over the life of the record without any proprietary software.

## About Braun Intertec

Based in Minneapolis, employee-owned Braun Intertec is a premier engineering and environmental consulting and testing firm that has more than 300 employees located in four Twin Cities offices as well as Hibbing, Rochester, Mankato and St. Cloud. The firm also has offices in Bismarck and Fargo, N.D., La Crosse, Wis., and Detroit. For more information visit [www.braunintertec.com](http://www.braunintertec.com).

## About CoSign Digital Signatures

ARX (Algorithmic Research) is a global provider of cost-efficient digital signature solutions for industries such as life sciences, healthcare, government, engineering, and energy. ARX's CoSign digital signature solution automates approvals affordably in a compliant manner, allowing organizations to go paperless, expedite business processes and save costs. CoSign is the only digital signature solution that is seamlessly integrated with Microsoft® SharePoint® and other popular DM/ECM solutions. CoSign signatures are globally accepted by external partners without the need for proprietary-validation software. CoSign is also centrally managed through the organization's user directory for reliable control of signature privileges, and ease of use and administration. Learn more about the CoSign [digital signature](#) solution.

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