



Maintenance Service Bulletins

Adding Value While Meeting Compliance

THE ORGANIZATION

Over the past five years, Burntsand has been working with a major commercial aircraft manufacturer to develop, maintain, and enhance an application for the authoring and document management needs of their Service Bulletin Engineering (SBE) group. SBE consists of approximately 150 engineers in the Pacific Northwest, California and England.

THE BUSINESS CHALLENGE

A Service Bulletin is anywhere from 1 to 1000 pages in length with the average being 35 pages. The group publishes approximately 1500 bulletins a year. For a manufacturer whose products typically have a working life of 40 years or more, the production of these federally mandated documents is a significant financial burden. Beyond satisfying base-level compliance, any opportunity to add value for the customer or increase business efficiency is of critical importance.

THE BURNTSAND SOLUTION

Burntsand has worked closely with the organization, first to improve the product and its delivery for their airline customers and most recently with a major redesign to improve author efficiency. A robust J2EE architecture provides the framework for greatly improved tooling and removes the organization's dependency on heavily customized commercial products while at the same time, providing long term scalability, flexibility and maintainability of the application.

Project Background

Service Bulletins (SB) are the primary instrument by which modifications to aircraft are detailed, implemented, and certified. Both the [US] Federal Aviation Authority (FAA) and joint international aviation authorities require the Type Certificate Holder for an aircraft model to design, document, and deliver Service Bulletins for as long as there are aircraft of that model in service. An SB describes step by step how to perform a modification; It lists all aircraft, by number and owner that are affected by the bulletin; It also provides critical background information for the customer to make planning decisions.

Service Bulletin Lifecycle

Starting with either a base template or a previous version of a related Service Bulletin - converted on the fly from its legacy format - the author uses the application to build a new structured document from a combination of i) their own editorial content; ii) a common repository of context-sensitive content fragments; and iii) data received from various other systems within the company. These data feeds include a list of all particular aircraft affected by the Service Bulletin: the Effectivity; a list of probable parts involved in the modification; and all illustrations required to convey the details of the modification. Once the content is complete, the Service Bulletin is programmatically validated for both structure and content. This includes ensuring that the most recent data from the external sources is being used. The document is then distributed for review to a larger audience within the organization including FAA-designated representatives. If further changes are required, the document goes back to the authors for rework. Otherwise, if all approvals have been met, the document is finally published (in multiple formats) and archived within the secure document management repository for complete FAA compliance.

Features & Benefits

Dynamic Parts Management

The list of parts that comes from the data feed provides the base inventory from which the engineer can draw to complete the instructions. All inserted references to parts are invoked from drop down menus and the bulletin is subsequently audited for parts use and quantity before it can be published. At the time of publishing, the application generates a Packing Bill of Materials, complete with labeling, which is used to assemble kits of the relevant parts for sale to the airline customer.

Customer benefit: the airlines now get error-free Parts Kits; no lost time due to reordering while aircraft sit idle.

SBE benefit: hassle-free data entry of complex parts numbers; minimal rework; programmatic auditing.



ABOUT BURNTSAND

Burntsand is a technology consulting firm specializing in integrating content, processes and data. For more than a decade, Burntsand has been a respected EMC Documentum partner with proven expertise in Enterprise Content Management. Leading organizations have trusted Burntsand to deliver results-oriented business solutions including document management and scanning, digital asset management, web and portal publishing, publications automation, and records retention. Burntsand delivers optimum time to value and unrivaled customer experience whether delivering an Enterprise Content Management Roadmap, complex integration or product installation. Our consultants work hard to ensure that accountability, leadership, teamwork and trust are the guiding principles of every engagement. With additional expertise in .NET development, Burntsand can help you create intelligent solutions that integrate seamlessly with your business.

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Effectivity

The list of aircraft for a particular bulletin is further broken down within the application into subgroups. Data within the SB is tagged according to which subgroups it applies.

Customer benefit: on the portal, the Service Bulletin can be filtered to display only the information relevant to their particular airplane(s). This can mean the difference between viewing ten pages or a hundred.

SBE benefit: authors can quickly tag individual fragments of the bulletin for particular subgroups of aircraft without having to write complex exceptions.

Multiple Release Formats

The application generates various formats for distribution including i) a fully FAAcompliant, PDF version of the SB that is sent to the customer by fax or downloaded from the manufacturer's customer-facing portal; ii) a digital file of the Service Bulletin adhering to the ATA 2100 SGML DTD that is sent via hard media or downloaded from the portal; and iii) an XML file that is sent to the portal application where it is rendered in HTML.

Customer benefit: flexible formats to suit the airline's needs from simple fax to online delivery.

SBE benefit: authors focus on content and need not be aware of the final format. The application takes care of rendering their work in multiple formats.

Smart Boilerplate

The context-sensitive content fragments – boilerplate – range in size and complexity from single copyright statements to entire pre-filled tables or standard instructions.

Customer benefit: greater consistency across multiple bulletins.

SBE benefit: massive reduction in data entry due to the ability to pre-populate the entire bulletin with dozens of fragments based on the results of a simple wizard-type questionnaire.

User Acceptance

The Burntsand team works closely with a broad cross section of the SBE user community at all stages of the development cycle to ensure the best quality tools and to take advantage of a vital source of new ideas.

Customer benefit: new product features are implemented sooner.

SBE benefit: high degree of user buy-in for potentially complex new functionality. Major productivity gains for novice and advanced users alike.

“With these changes to the product, our customers are seeing 25-40% decrease in the time taken to perform the modifications...”

Further reading:

To view Burntsand's presentation of this application at Documentum's 2004 conference in Montreal please visit:
http://www.momentumlive.com/montreal/presentations/Thu_TR5_1130_Burntsand_MacLachlan.ppt