BOEING

Service above and beyond

Boeing Spectrum - Customer Use Case

OEM component manufacturer eliminates fragmented document workflow, speeds publication process with advanced software

The Challenge

Slow publication process, high distribution costs slow down progress

An Original Equipment Manufacturer (OEM) struggled with fragmented technical publications across airframe, engines, and avionics: legacy Word/PDF manuals, separate IPC/Parts catalogs, inconsistent wiring diagrams and schematics, slow Material Review Board (MRB) update propagation, and high translation and distribution costs for global MROs.

The manufacturer - providing end products and services for defense air systems around the world - needed a lean, standards based approach to author, manage, update and publish maintenance and flight deck support information that met FAA/EASA auditability and airline operational needs.

A complicated workflow process

As with any large OEM, there are certain challenges to the document workflow process. However, they realized these were not sustainable, for many reasons. Some of the challenges the organization faced included:

- **Disparate source formats** for AMM (Aircraft Maintenance Manual), CMM (Component Maintenance Manual), IPC/ETM (Illustrated Parts/Equipment Technical Manual), Wiring and Schematics, and MEL/CDL content.
- **Long lead times** to release revisions for airworthiness directives (ADs), service bulletins (SBs), and maintenance repair bulletins (MRBs).
- **High translation and distribution costs** for operator fleets across regions.
- **Poor reuse** of procedural steps, safety cautions, tooling lists and troubleshooting logic across models and variants.
- **Traceability gaps** between engineering change orders (ECOs), certification records, and published manuals — complicating audits and return to service decisions.

The Solution

An S1000D compliant platform to simplify document workflows

The OEM reached out to Boeing to explore potential solutions. The answer was Boeing Spectrum S1000D.

Spectrum is an end-to-end solution for managing complex technical publications. The software simplifies the document workflow, building out a holistic view with a set of modules tailored to the needs of the end user. The result simplifies decision-making and removes barriers to performance.

The partnership led to a solution tuned for aviation technical publications and regulatory requirements, following a phased, lean transformation.

Capabilities leading to outcomes

Workflow	Capabilities
Regulatory and schema alignment	• Mapped S1000D data module types to aerospace deliverables (AMM tasks, CMM procedures, IPC/ETM content, wiring diagrams as S1000D figures/attachments). • Ensured outputs and metadata met FAA/EASA compliance, operator technical library expectations, and airline configuration management needs.
Content architecture and module design	• Converted manuals into modular S1000D data modules (procedures, tasks, fault isolation, IPC items) and established common schemas for safety notes, limitations, and MEL/CDL entries. • Used conditionalization and variants to manage model/series differences (engines, avionics options) without duplicating modules.
CSDB and asset standardization	• Implemented a Common Source Database (CSDB) to host DMCs, XML metadata, raster/vector graphics (schematics, wiring looms), and video/3D assets for maintenance training. • Standardized graphic naming and layering for wiring diagrams and schematics to enable automated extraction and reuse.
Lean workflows for aviation content lifecycles	• Applied Kanban and smaller batch updates for task-level changes so AD/SB updates could be pushed to affected modules quickly. • Automated build pipelines to generate IETMs, legacy PDF AMM/CMM sets, IPC/ETM outputs and XML deliveries for airline AESA/ATA data feeds. • Integrated ECO feeds so engineering changes flagged impacted modules and created reviewer tasks with traceable audit trails.
Training, governance and audit readiness	• Trained technical authors, certification and MRO stakeholders in S1000D rules (issue/revision stamping, version history, status codes). • Established a lightweight configuration control board to manage release cycles for ADs, SBs and operator requested changes while maintaining regulatory traceability.

The Results

Reduced costs, improved speed and visibility

The OEM quickly realized significant results using Boeing Spectrum. These benefits included:

Faster response to airworthiness events:
The time to publish critical SB/AD related updates reduced by ~50%, enabling faster operator compliance.

Translation and localization savings:
Modularization and content reuse cuts translating languages volume by ~40%, reducing global distribution costs for multi language operator fleets.

Reduced manual rework:
Standard templates, automated validation checks, and graphic reuse lowered editorial and engineering rework by ~30%.

Improved operational MTTR:
IETM task updates and richer wiring/looms reduced Mean Time to Repair (MTTR) for line maintenance cases.

Audit and certification confidence:
End to end linkage from ECO to DMC to publication provided demonstrable traceability for FAA/EASA audits and continued airworthiness records.

> “Our airline customers now receive precise, variant aware maintenance tasks and updated IPC entries without the previous delays. Boeing helped us implement S1000D in a way that respects certification workflows and operator needs — we’re delivering compliance information faster and at lower cost.”
>
> Senior Director, Technical Publications

The Difference

The Single Source of Truth

Spectrum's S1000D design enforces modular, reusable structures ideal for the complex variant/option permutations in aircraft fleets. Coupled with Boeing's aerospace domain experience, S1000D is implemented to ensure certification, operator distribution formats, wiring/IPC specifics and real world maintenance workflows — not just XML conversion.

On top of that, the platform enables Common Source Database (CSDB), automated publishing, and governance to maintain a single source of truth for airworthiness documentation and speed updates to in service aircraft.

A functioning pilot within 8-12 weeks

When the OEM started seeking a solution, speed to implementation was a critical factor. They needed to get up and running quickly — in weeks, not months — in order to stop the hemorrhaging of time and cost.

Boeing Spectrum's pilot was quick, customized, and delivered collaboratively. The implementation took under 12 weeks and consisted of a set of established procedures, phased out for efficiency:

- **Week 1–2:** Audit sample manuals (AMM tasks, IPC sections, wiring looms), map ECO/AD/SB pain points.
- **Week 3–6:** Convert a representative set of AMM tasks, one IPC section and wiring diagrams into S1000D DMCs; implement CSDB for pilot content.
- **Week 7–8:** Automate a publish pipeline to generate IETM and PDF outputs; run a simulated AD update to measure lead time.
- **Week 9–12:** Measure reuse potential, estimate translation savings, and provide a roadmap for phased rollout across fleets and product lines.

Establishing a new way to manage complex workflows

After the short pilot, the global OEM found Boeing Spectrum to offer the capabilities and functionality needed to simplify complexities and move faster, all while maintaining data integrity in one comprehensive platform.

With superior functionality, an enhanced user experience, and the ability to scale with large data sets into the future while remaining compliant, Spectrum was the only choice. On top of that, the OEM anticipates saving costs through several different avenues: improved workflow efficiency, eliminating third-party authoring licenses, and competitive pricing from Boeing.

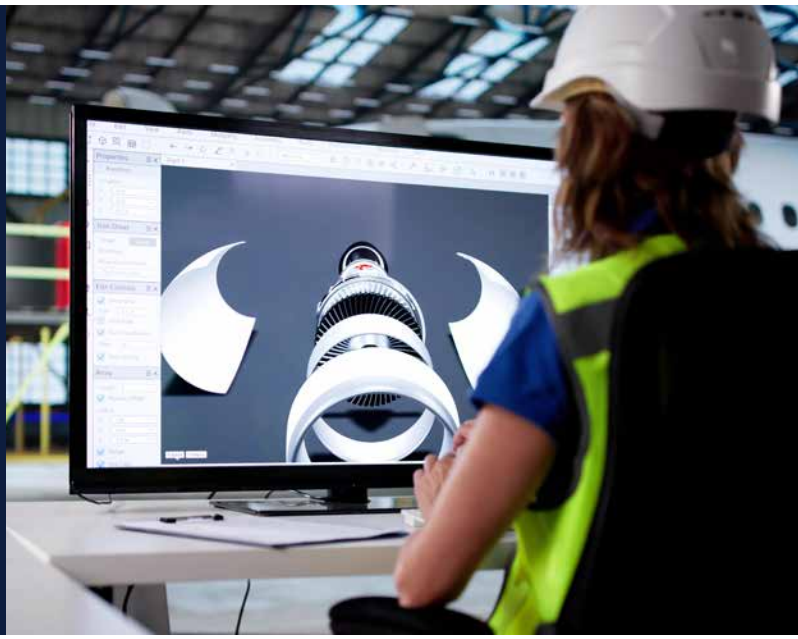
Why Boeing?

With nearly five decades of domain expertise, Boeing combines industry-leading software tools with expert consulting to simplify authoring and support of technical publications throughout the engineering and operational lifecycle. Our team can evaluate your current processes, recommend portfolio updates, and assist in transitioning to or optimizing your Boeing Spectrum solution for maximum productivity.

Contact us:

Looking to turn your technical writing into a page-turner?
The right-write solution is here.

Jeroen Zuidhof
Marketing Manager
jeroen.zuidhof@boeing.com



services.boeing.com