

# CDG Helps A&D Industry Create and Deliver Higher-Quality Product Information Using Arbortext® from PTC

## High-impact, Low-cost Spare Parts Catalog Solution for S1000D®

### Continental Data Graphics (CDG), Cypress, CA

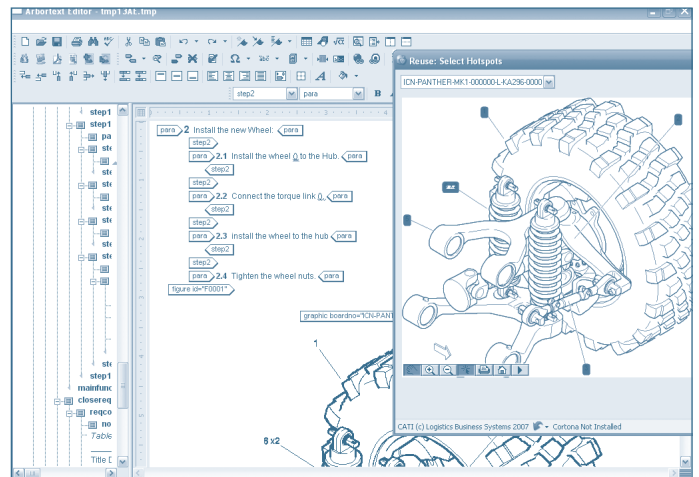
As a wholly-owned subsidiary of The Boeing Company®—with 1000 employees working in multiple locations in the USA and Europe—Continental Data Graphics (CDG) has grown to become a leading provider of products and services for creating, converting, managing and delivering technical product information.

CDG understands how technical documentation and product information influences a supplier's field service success, its fiscal performance, and its competitive advantage. CDG has supported heavy equipment suppliers in the worldwide Aerospace & Defense (A&D) community and other industries for more than 40 years as a leading consultant and professional services company. Today, CDG provides technical authoring and advisory services to customers who want to improve their technical publication practices.

### The Challenge: Global Product Support Exposes Outdated Technical Publication Processes

In 2008, CDG was contracted by a leading global supplier of high-performance, low operating cost compressors to evaluate its infrastructure for delivering technical product information. The supplier has an extensive, 100-year history in the market, with a large customer installed base and the associated after-market services for a wide range of industrial equipment products. The supplier's equipment is operated and serviced globally to support a variety of processes across all industrial sectors, with a focus on Marine and Defense, as well as the Oil and Gas industries. The supplier is dedicated to providing exemplary global service and support throughout the entire lifecycle of its products.

Recently, distribution of the supplier's products has expanded significantly. In addition, the complexity of product data for maintenance had overwhelmed current business processes. After analysing the supplier's situation, CDG determined that the supplier faced an immediate dilemma in its ability not only to maintain the quality, accuracy and accessibility of its parts catalogs, but also to successfully support the activities of their global partner and field service organizations.



With the PTC S1000D solution, text authoring is seamlessly integrated with the creation of illustration and graphics—for an optimized S1000D-compliant technical publishing process.

### The Solution: Install Arbortext and S1000D to Create Accurate Spare Parts Catalogs

As the supplier's technology services partner of choice, CDG was tasked with designing and implementing a cost-effective, end-to-end publishing solution for the supplier's spare parts catalogs – from creation, to delivery, to end-of-life. This catalog solution had to meet several stringent requirements, including:

- Provide online and offline access to the same catalog information:
  - Online, to comply with Interactive Electronic Technical Publication (IETP) and Interactive Electronic Technical Manual (IETM) standards to support regional in-house technical support teams
  - Offline, to support the field service organization working in rugged environments with unpredictable access to a working computer
- Automate and control the process of updating individual or multiple spares information without affecting the remaining catalog items
- Improve information accuracy and eliminate data duplication, while making catalogs easier to comprehend, so as to simplify tasks regardless of the reader's native language

To fulfill the customer requirements, CDG had to ensure compliance with the dominant specification in A&D, S1000D, and deployed an integral, process-centric product information delivery solution with PTC's Arbortext software.

### Why S1000D?

With S1000D, unique data modules are created (containing text and/or graphics), and then controlled in the Common Source Database (CSDB). Through the use of these data modules, parts information can be broken into smaller pieces or fragments of repetitive data that can then be reused either within the same publication, or in other publications, and even in other projects. With this method, users can achieve significant time-savings and greater accuracy in the authoring process, as data modules are simply “plugged into” any catalog or project documentation, as needed. In short, with S1000D, there is no longer a need to re-create the same information over and over again.

CDG proposed the S1000D standard so the client could fulfill both S1000D and noncompliance-specific catalog requirements, using a single solution. Today, the S1000D specification is widely adopted for the creation and delivery of technical publications, such as spare parts catalogs, service procedures, and operator manuals, for both A&D and non-A&D requirements.

### Arbortext – Product Information Delivery Solution for S1000D

CDG selected Arbortext software because of its proven success within the A&D sector for more than 10 years, with the highest number of active S1000D installations worldwide. Arbortext’s complete portfolio of end-to-end software products provides the industry’s only out-of-the-box solution for S1000D. As well, Arbortext contains the full set of capabilities required to create, maintain, publish and update technical product information compliant with S1000D, S2000M (from provisioning) and SCORM (for eLearning).

For the supplier’s spare parts catalog solution, CDG deployed the following integral Arbortext software products:

- Arbortext Common Source Database (CSDB) for S1000D® – for single-source content management and project management
- Arbortext Editor™ – for content authoring
- Arbortext IsoDraw® – for 2D and 3D illustrations that are linked to the parts data module
- Arbortext Publisher for S1000D® – for the delivery of parts catalogs, both paper and electronic
- Arbortext Provisioning Manager™ – for the production of the spare parts data modules

### The Result: Access to Product Information Online or Offline with Dramatic Accuracy Improvements and Cost-Savings

- Consistent online and offline information. By implementing Arbortext as the backbone of the supplier’s product information delivery system, CDG deployed an end-to-end system that delivers PDF, page-based, interactive electronic parts catalogs, with a paper-based catalog counterpart to meet the demands of the supplier’s field-based technicians.

With an S1000D-compliant application, the supplier’s writers can author, filter and assemble the applicable data modules for the designated catalog using the standard numbering system (SNS). The solution automatically applies formatting, then

dynamically publishes to a print-ready PDF for use offline, and publishes an equivalent Interactive Electronic Technical Publication (IETP) for use online.

- **Higher-quality product information.** With Arbortext’s configuration management capabilities, chapters and illustrations assigned within each catalog – in the form of data modules – can be independently revised and published, as needed, so that each version of a catalog accurately reflects its related products at every point in their lifecycle.
- **Increased data accuracy.** The creation and reuse of data modules, to generate parts information, minimizes the labor-intensive work and rework of information. Coupled with the centralized, single-source data repository – in this case the Arbortext Provisioning Manager integrated with the Arbortext CSDB for S1000D, the solution provides a dramatic increase in data accuracy and reduction in data duplication. Arbortext controls data module creation, approval and control, to ensure that only valid, authorized content is published and that no outdated information will enter the field.
- **Slashed costs.** The supplier’s editors previously were required to edit, reformat and republish an entire parts manual – up to 50,000 pages – even though only selected parts of the document were being updated. With the parts-based authoring capability of Arbortext, authors can now update just the relevant parts codes – with minimal keystrokes – and then Arbortext automatically formats and publishes the manual to the print-ready PDF format. The Arbortext solution has saved authors and reviewers hundreds of hours of labor per catalog update.
- **Reduced “unneeded” parts.** An unanticipated, yet highly beneficial side benefit from the supplier having improved data accuracy was that fewer redundant and unnecessary spares are finding their way into the field. With the Arbortext solution, technicians can more accurately identify the required spares, and in doing so, are reducing the handling, shipping and potential loss of unneeded spares.

### CDG’s Supplier: Poised for Continuous Business Improvement

With Arbortext, CDG’s supplier customer now has the capability to provide up-to-date, targeted information for each task at hand, whether the parts catalog is delivered electronically or on paper. The integral system is built to accommodate additional products and projects easily, including the production of eLearning courseware for SCORM-compliant training as well as initial provisioning capability compliant with S2000M Chapter 1. CDG has deployed an intelligent, integrated solution that will provide ongoing cost savings and continued business improvement.

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