How S1000D Issue 4.0 Impacts Technical Publication Strategies in A&D

Companies that produce equipment or components used in US Army, US Air Force and other global Aerospace and Defense (A&D) programs that adopt S1000D Issue 4 will have to produce documentation compliant with this new version of the standard.

Despite the release of Issue 4, many new and existing A&D programs will choose to adopt an earlier issue of the S1000D specification. What's the best strategy for deploying an S1000D-compliant publishing solution going forward?

Many top A&D organizations are now adopting a single-vendor solution, such as PTC's Product Information Delivery Solution for A&D, which simultaneously supports all versions of S1000D, including Issue 4. Read on and learn more about this powerful, comprehensive solution for S1000D.

S1000D: A Primer

The Aerospace and Defense (A&D) Specification S1000D is an international requirement for creating, managing and maintaining technical publications within the civilian and military A&D industry. S1000D is now being embraced by many organizations worldwide who are developing complex A&D systems and equipment. It's also being implemented and in some cases mandated by global Departments of Defense, aircraft manufacturers (civil and military), aircraft operators, shipbuilders, builders of land systems, and manufacturers of most types of equipment designed for defense complexes worldwide.

In the near future, most companies that either produce equipment used in the A&D industry, or supply components to major contractors in A&D, will face a requirement to comply with S1000D. However, since different A&D programs have adopted different versions of S1000D, every A&D supplier – before deploying an S1000D publishing solution – should first determine the relevant issues of the particular standard for which it needs to comply.

This topic sheet provides an overview of S1000D Issue 4, and outlines which A&D programs are likely to adopt it, as well as the impact that Issue 4 will have on organizations planning to deploy publishing solutions compliant with this new specification.

Many top A&D vendors are adopting PTC's Product Information Delivery Solution for S1000D, since it delivers compliance for all existing versions of S1000D and will support future releases.

Overview of S1000D Issue 4

As a rule, each issue of the S1000D specification is undertaken to meet specific business needs of existing and potential users. Issue 4.0, dated 2008-08-01, was released on 13 September, 2008. This issue introduced a set of changes to the specification that fall into four distinct groups:

1. Changes requested by the US Army.
2. Training modules compliant with SCORM (Sharable Content Object Reference Model) eLearning. SCORM is both a collection of standards and specifications for web-based eLearning, and a specification of the Advanced Distributed Learning (ADL) Initiative of the Office of the United States Secretary of Defense.
3. S1000D schema improvements and cleanup.
4. Miscellaneous changes recommended both by the defense ministries of various nations and the Air Transport Association (ATA) to simplify the adoption of the specification.

Changes Requested by the US Army

S1000D Issue 4.0 contains 42 Change Proposal Forms (CPFs) submitted by the US Army. A number of US Army business processes were not previously supported by the S1000D specification. Those areas include: general information attributes, information management attributes, graphic attributes, security attributes, support for units of measurement different from S1000D, support for US Army Information codes, new formatting rules, and maintenance planning capabilities.

Learning Data Module and a New SCORM Content Package

S1000D Issue 4.0 released a new learning data module type and a new SCORM content package. This new learning data module can contain: learning plan information, learning overview information, learning content information, learning summary information, and learning assessment information.

S1000D Schema Improvements and Cleanup

With Issue 4, the Electronic Publications Working Group (EPWG) undertook a generalized "cleanup" of the schema in order to both optimize and standardize the S1000D schemas. These changes optimized the S1000D specification around the XML (Extensible Markup Language) standard. Initially, SGML was the driving technology in S1000D, and the specification was optimized around the functions and facilities of SGML. S1000D Issue 4.0 exclusively supports the XML standard, such that use of SGML is no longer supported.

Additionally, Issue 4 renames and standardizes the use of most elements and attributes, with the goal of making XML more easily understood. The new, longer names provide instant recognition, and contribute to making the specification easier to use. The schema cleanup in Issue 4 also resolved a number of small but confusing inconsistencies between different schemas.

Recapping Recent and Future Releases of S1000D

The S1000D specification has a rigorous change process. Requested changes to the specification are documented by a Change Proposal Form (CPF). The detailed change process is described at the S1000D website (www.s1000d.org) under the tab CHANGE PROPOSALS.

Here's a quick recap of the major feature changes from S1000D Issue 2 to Issue 3, as well as a look at what's expected in future releases of the specification:

- **S1000D Issue 2.0 (released in 2003).** The major new feature of Issue 2.0 was the introduction of the Process Data Module.
- **S1000D Issue 2.3 (released in 2007).** The major new feature of Issue 2.3 was the introduction of multimedia (3D, audio, flash files, etc.) to the specification.
- **S1000D Issue 3.0 (released in July 2007).** Issue 3.0 was specifically designed to meet the needs of the Air Transport Association and the Boeing Company in support of its 787 Dreamliner aircraft. This issue also included a new applicability model and other changes recommended by the defense ministries of various nations.
- **Next release of S1000D (planned for 2010).**

The next release of the S1000D specification is planned for 2010. While the content is still being defined, changes will follow the standard S1000D change process. Changes requested by various nations and organizations will be reviewed by the S1000D committee, and if they in fact contribute to improving the specification, they will be implemented. These changes will reflect lessons learned in implementing the specification, as well as new and emerging but proven technologies that will reduce cost and improve efficiencies.

Issue 4: Impact on Organizations Deploying S1000D-Compliant Publishing Solutions

The US Army is now preparing its organizational business rules, and should have them ready for publication in the near future. This will allow US Army programs to choose S1000D Issue 4.0 as the standard for Technical Publications. Note: Suppliers to new A&D programs that adopt S1000D Issue 4.0 will be required to provide documentation compliant with the standard. Additionally, the US Army will potentially require that programs, which adopted S1000D prior to Issue 4.0, migrate to it.

The United States Air Force (USAF) is currently in the process of building its business rules. Once these business rules are complete, the USAF is expected to support Issue 4.0 as an allowed specification. Therefore, companies and organizations that either produce equipment, or supply components to equipment used in USAF programs that adopt S1000D, will also be required to comply with Issue 4.0.

However, the release of a new issue of the specification does not mean that new programs will necessarily adopt the new versions. Many programs, which have adopted S1000D at various issue levels, continue to be very successful. Implementations of Issue 1.6, 1.7, 1.8, 1.9, 2.0, 2.1, 2.2, 2.3, and 3.0 exist today and will continue for the foreseeable future. Migrations occur when the new technologies or a feature of the new issue provides a compelling business reason for migration. For instance, the United Kingdom Ministry of Defence has used Issue 1.9 for some years as its national standard, but their current business case now supports migration to Issue 2.3 (but not 3.0 or 4.0).

Conclusion

Since most companies, including component suppliers that produce equipment used in the global A&D industry, will have a requirement to comply with multiple issues of S1000D, the best and safest strategy is to deploy a solution like PTC's Product Information Delivery Solution for A&D that simultaneously supports multiple issues of S1000D. PTC's solution fully supports each version of the S1000D specification, up to and including Issue 4.0 (support for S1000D issue 4 to be released in Fall of 2009*). It also features additional benefits that offer far more than specification compliance, including:

- Automation of the entire technical publications data management process
- Support for the full lifecycle of the technical publications process
- A single vendor/single solution approach making upgrades easier and lowering the total cost of ownership
- Leverages rich product information created by engineering, resulting in improved data reuse and higher-quality publications

For more information on S1000D, visit **www.ptc.com/go/adpid**

*The content and timing of future product releases is subject to change.