Expert Panel Questions and Answers

Thank you for participating in SDL’s Ask an S1000D Expert Tour event. Below are the questions that we gathered prior to, and during the event, along with the responses.

We appreciate the tremendous feedback you provided and look forward to seeing you at a future S1000D event.

General Questions

Q  My customer hasn’t asked for it, why should I care about S1000D?

If your business is diverse and involves supporting the creation, management and delivery of technical information for aerospace and defense programs, there is a strong probability that S1000D is in your future. Today, the probability is higher for new systems than legacy systems, but even with legacy systems, if the information changes regularly, if there is a need to exchange data between different suppliers, and if someone within the program is interested in exploring if S1000D can introduce savings to the program, then it will certainly come up.

SDL is seeing a trend within some of the larger service firms who are starting to retool for S1000D to remain competitive. They are investing in S1000D education and tools, so they can communicate their S1000D capabilities. In the short term, the investments are being made to increase competitive advantage. In the long run, if the DoD mandates S1000D as part of a strategic acquisition strategy, then more and more programs will be managed with the S1000D data standard.

The Standard

Q  What does S1000D offer that other MIL-STDs can't?

One of the prime benefits moving to S1000D from another MIL-STD is that S1000D CSDB manages all of the metadata for each object (work package) at a systems level. What S1000D offers authoring users is the elimination of keying mistakes during metadata entry as well as a concrete process to manage their work packages during the creation, management, and publishing of technical manuals.
The following benefits of S1000D are directly from http://public.s1000d.org/Pages/Benefits.aspx.

**Benefits**
The use of S1000D has multiple benefits that fit into four principal areas; realisation of these depends on several factors, implementation strategy, infrastructure etc. The common list of benefits is as follows:

**Data benefits**
- Interoperability at data level, through use of schemas etc
- Meta Data, consistently applied across the suite of information
- Data Dictionary, standardization of naming conventions
- Non-proprietary, based on open standards
- Ease of data exchange, smaller, sgml/xml based files structures
- Can be linked with source data e.g. LSAR, can be used to enhance integrated data environment
- Permits the addition of extra documentation features such as Link mechanisms etc., enabling better end user experience
- International standard, ISO 8879
- Delimits objects of information, rather than the traditional paper bound constraints, enables more focused data
- The AECMA S1000D data module concept can be and has been applied to legacy data, enables single concept to be applied across new and legacy sources

**Authoring Benefits**
- Re-use of data i.e. it is modular, allows re-use up to 40%
- Reduction in update costs, due to use of data module concept, of up to 30%
- Defined Document Structures, allow authoring structure to be defined within programs
- Module Uniqueness (Task /Description), allows task orientated definition
- Toolkit, standard toolkits available
- Implementation Guidance, to ease set up etc
- Compliant Authoring tools available, multiple vendor support

**Training benefits**
- Single User Interface, eases end user acceptance
- Single Document Construct, eases standardization
- Single Method of Production, eases synergy within and across organizations

**Lifecycle cost benefits**
- Reduced creation costs, due to data re-use
Lower document distribution costs, multiple methods of delivery available
Lower footprint costs, e.g. warehousing, multiple methods of delivery available
Wider access and more efficient retrieval of the documentation by the end user, multiple methods of delivery available
Easy filtering of information e.g. Search and retrieval by applicability, through use of metadata and content in searching
Increased operational readiness through reduced MTTR, through more focused maintenance
Increase in data integrity and the generation of better quality documents, through data integration and data module concept

What is the future of S1000D? Where is it going?

In 2010, there is a lot of focus in S1000D on “harmonizing” technical and training content. The intent is to reuse technical data within training deliverables and maintain the relationships between technical and training content, so that as the technical data changes, the training content can keep pace. S1000D Issue 4.0/4.0.1 is the first instance of the standard that theoretically allows the co-existence of technical and training content. Now research projects are working to develop the practical use scenarios and refine the standard and the understanding of the tools needed to deliver the vision.

As for S1000D adoption rates, at the AIA conference in Clearwater, FL this year, there were over 300 attendees, when typically in the past, there have been 150 to 200. An informal speaker poll showed there were more people participating this year for the first time. The speaker and audience took that as a very clear sign that S1000D interest was gaining momentum.

Additionally there are now all sorts of “S” specs being developed, with significant work taking place within the standards group representing all of the armed services.

Which armed services are using S1000D today?

The US Navy (NSWC and NAVAIR) appear to be leading the way with the most S1000D projects, but each Service (Army, Air Force, Coast Guard), have large projects focused on using the S1000D standard.

What is the comparative difference between S1000D and XML?

S1000D uses the XML standard as the foundation for all data storage, manipulation, and presentation. S1000D is a specification built on top of the XML standard and serves as an extension of the intent of XML. By using the various capabilities of XML, such as schemas (XSD files), XML files to hold the information sets created by the schemas,
transforms (XSL files) to create various output formats for presenting the information, and various other features of XML to support conformance to the authoring standards; S1000D leverages all the capabilities of XML to provide significant advantages to the authoring and publishing teams; plus end users. The ultimate advantage is in using the XML standard to create flexible content which can be used in different ways to accomplish presentation using more than one output format. This benefits the manufacturer of the data as well as the end user of the information. Authoring teams can focus on technical writing and for the most part ignore formatting of the content. The publishing team can then focus on creating the various output formatting requirements and use the same source data in multiple ways, for example printed publications, formatting for various display devices, and the ability to recycle the same content across multiple environments such that it is operating system as well as output device agnostic.

Q

Is training for S1000D being offered in North America to date?

Non-product specific training on the S1000D standard is offered by SDL. Please review the “SDL S1000D Standard Education Series” course descriptions provided below.

SDL also offers product training and workshops that provide hands-on access to a complete S1000D Solution.

SDL Structured Content Technologies S1000D Workshop Outline

Objectives
- Gain a high level understanding of specification
- Experience the project planning process
- Create S1000D content
- Manage content in a CSDB
- Publish an interactive electronic technical manual (IETM)
- Lay foundation for business case

Prerequisites
- Team has XML authoring skills
- Executive sponsor identified, and available for opening and close of workshop

Day 1
08:00 – 08:15  Introductions, clarify objectives
08:15 – 09:00  Customer presentation on business, challenges, etc
09:00 – 10:30  S1000D spec overview
10:30 – 10:45  Break
10:45 – 12:00  Develop a partial system breakdown (SNS) for candidate system
12:00 – 13:00  Lunch
13:00 – 14:30  Develop DMRL for project
14:00 – 15:00  Author data modules
Q & A

Q  Exactly what is S1000D and how does it compare to other products like it?

S1000D is not a product, but rather is a data standard used by products.

Data Conversion

Q  How can I convert my MIL-STD data to S1000D so that my users don’t have to cope with two different data formats?

There are many factors that impact the level of effort and complexity of converting any MIL-STD data to S1000D. The factors go beyond mapping tags to the S1000D XML constructs and also get deep into making decisions about data module size that impacts “how” the data is used.

The US Navy reported that they made a decision to have every procedure be a data module (DM). When migrating from a book structure with chapters, sections and paragraphs, a person may sometimes need to look at the data to see where it should be logically segmented into reusable data modules.

There are a number of service providers that provide data conversion services. These are appropriate for large volumes of data. The service providers guarantee a very high level of accuracy and put the data through a variety of automated and manual processes to achieve the desired results. A significant effort is focused on validating data quality as well.

If requested, SDL can recommend companies that have demonstrated capability in the aerospace and defense industry for their quality services.

For programs that don’t have a lot of data to convert, a simple cut and paste method works.

Also for the “do it yourselvesers”, SDL can recommend software tools available that can be

---

15:00 – 15:15  Break
15:15 – 16:30  Load content into CSDB, build publication module, and publish
16:30 – 16:45  Wrap-up, action items, homework assignments if appropriate

Day 2
08:00 – 08:30  Recap of Day 1, answer remaining spec-related questions
08:30 – 10:00  ROI discussion – talk about what ROI is, what metrics are available to build ROI, and plan of attack
10:00 – 10:15  Break
10:15 – 11:00  Outbrief with executive sponsor, determine next steps, etc.
configured (to a degree) to assist with your data conversion needs, but you should also plan to include manual labor for data validation and correction.

It’s important to note that you don’t have to convert all of your data to S1000D in order to provide your end users with a common look and feel. IETP and paper output can be harmonized to provide a common look and feel, even if the underlying data formats are different.

The Business Impact

Q  What is the business proposition – particularly what benefits will my customers realize from implementing S1000D?

The main benefits are costs savings in the life-cycle maintenance for your customer’s publications. There may also be reduced Mean Time to Repair (MTTR) when an intelligent IETP is used for a maintenance visit. We would also refer you to the benefits listed on the S1000D.org web-site: http://public.s1000d.org/Pages/Benefits.aspx

Q  Often times employers are hesitant on implementing or paying for training on a new software tool due to time consumption (employee away from jobsite) and cost of the tool. What selling points are being used to encourage employers that this is the direction for Technical Publications of the future?

The starting point for training would be to start understanding the S1000D data standard and how it will benefit your company or your customers. Then get involved in some of the industry events, so you can experience first-hand the momentum that is building around S1000D. Once you are convinced that S1000D is here to stay, then it’s not about IF you should invest in the training of your resources or purchase tools, it’s WHEN is it justified to invest in S1000D? Some larger service companies are investing in S1000D now to gain the experience, add to their capability portfolio, and to prepare to meet their customer’s new demands.

If your customers haven’t started asking about S1000D, perhaps you should consider a strategy to meet with them to explore if S1000D is in their future. If it isn’t, AND if you have no interest/prospect of expanding to support a program that requires S1000D, then don’t worry about it.

If, on the other hand, your customer says they are exploring it, then that will be instant justification to jump in with both feet and work to get ahead of the curve.

You can then position the training required and eventual S1000D product investment as a customer retention strategy OR perhaps a new customer acquisition strategy. If you
have a customer lined up that requires S1000D, or you see that a lot of opportunities you are going after require an S1000D support capability, then your justification becomes even more straightforward.

Send a resource to an S1000D industry conference and have them report back!!

**Tools and Resources**

**Q** What are the software requirements?

Software requirements are:

- CSDB
- XML Authoring Tool
- Publishing Engine for Type 1 and Type 2 Deliverables
- IETP Viewer

**Q** What is a rough estimate of startup costs (software needed) when selecting S1000D?

SDL would be happy to work with you directly to size a system appropriate for your needs.
**Q** What level of expertise is needed to utilize S1000D, specifically data entry, database, programmer?

A good understanding of XML will greatly help tech writers who need to work with the S1000D standard. Additionally, training on the selected authoring tool is strongly recommended. Finally, training on the S1000D standard itself, as well as the CSDB and IETP to be used will be needed.

For IETP development, again a good understanding of XML will be critical, as well as an understanding of XSL, XSL-FO, HTML, Java, and JavaScript. Many IETPs will also require training on proprietary markup or rendering methods. (This is not the case with SDL LiveContent, SDL’s IETP, which uses only standard technologies.) You may also choose to outsource all of this work so it is not necessary to retain these skills on staff.

**Q** What is involved with supporting different S1000D “Issues”? Can I up-/down-convert if needed?

Each S1000D Issue has a different set of XML schemas (older issues also include SGML DTDs). Typically, contracts are written per a specific S1000D Issue, so organizations need to be able to output XML to the Issue specified.

Each Issue will require authoring tool templates and output style sheets for IETP and/or paper. Most CSDBs will support multiple S1000D Issues. SDL Contenta S1000D supports Issues 2.2 through 4.0 and provides sample authoring tool templates, and output styles for each Issue. While some CSDBs may require up- or down-conversion to combine DMs of different Issues into a single Publication Module, Contenta S1000D allows DMs of different Issues to reside in the same repository and in the same Publication module, so up- or down-conversion is not necessary.

SDL Contenta S1000D allows the use of different S1000D issues at the same time, from input, through delivery to your final IETP or PDF publication. No up/down conversion is needed as Contenta S1000D manages the process for you.

**Q** Do I have to up-convert every time a new issue of S1000D is released?

No. That’s a unique benefit of SDL Contenta S1000D. You are able to mix and match Data Modules from different issues of S1000D, so you are not forced to always up-convert to the latest release.

**Q** Can I support more than one Issue simultaneously for different products or customers?

You certainly can with SDL Contenta S1000D.
Q: I’m just starting out. Where can I go to learn more about S1000D?

There are several resources available:

- SDL Website – S1000D Resources Page:
  www.sdl.com/s1000DResources
- Download the Spec – for a little light reading:
  http://public.s1000d.org/Pages/Home.aspx
- S1000DPC™ User's Group
  http://www.s1000dpc.com/
- LinkedIn – “S1000D Users” Group

Q: What other applications are being used to generate S1000D content? We use Arbortext/AuthorPro.

Today, Arbortext Editor is the most widely used authoring tool within the military.

IETP

Q: What is the difference between S1000D and XML/HTML, and is there compatibility?

Q: S1000D uses the XML standard as a foundation for all data storage, manipulation, and presentation. S1000D is a standard for creating, managing and exchanging data. HTML is a display language for the web. With our IETP technology (SDL LiveContent), XML data is dynamically rendered to HTML within the browser using XML transforms, providing a real time interactive experience for the end user within a standards-based browser environment.

Q: How is an IETP any better than PDF?

IETP allows information to be filtered at run-time based on user interactions. Examples of this include applicability filtering and Process Data Modules, advanced fault isolation data that allows navigation to be driven based on input from the user.

Additionally, S1000D allows the use of multimedia, so graphical navigation using locator graphics, advanced wire highlighting and sheet to sheet wire tracing, videos, virtual task training, and much more is available in IETP and cannot be adequately represented in a static PDF page. While PDF has recently seen support for 3D models in an attempt to address the need for more intelligent content, a page-based format will never be able
to provide the personalized and interactive experience of an IETP.

PDF was created as a format for displaying printed documents. In recent years, more interactivity has been incorporated into the PDF world. Our customers demand both. They are referred to as Type 1 (PDF) and Type 2 (Interactive) IETM/IETP’s. Match your or your customers’ requirements to capabilities of the output and deliver what you need.

Q I don’t have multimedia or hotspots in my data; so what benefits will I see from using S1000D and an IETP?

S1000D offers many benefits over traditional MIL-STD DTD’s and Schemas including the following:

- Automatic generation and maintenance of metadata on all work packages
- Interactive technical manuals via use of the process data module
- Database controlled release of technical manual updates
- Easy exchange of data between manufacturers, contractors, and clients
- Data Re-Use between manuals, logistics data, and training data

Some examples of advanced functionality that you can address without intelligent graphics are applicability filtering and process data modules. Additionally, your users will be able to take advantage of standard IETP functionality such as annotations, revision highlights, searching, advanced navigation, hyperlinking, interactivity and integration with other systems, such as parts inventory. None of this functionality requires intelligent graphics.

Q Is an IETP the same as an IETM?

Yes. Here’s what each acronym stands for:

- IETP – Interactive Electronic Technical Publication
- IETM – Interactive Electronic Technical Manual

Q How intuitive is your search engine?

Anyone with experience using the web can use our search engine.
PDF

Q Do various solutions provide style templates that meet the requirements of the standard?

Most solutions provide a template style for producing a PDF publication, but everyone wants to tweak the styles in some way. Customers just have their ways of wanting to deviate. The LOOK of the output is one area where people have flexibility. Using SDL XPP, you can format the S1000D XML data according to the look and feel you desire for your printed publications.

For your Type 2 IETM needs, SDL LiveContent enables you to define both content styles and “skins” that control the look and feel of the information resource. Using standards based technologies (XSL and XSLT and Java), anyone with web site design skills can change the skins used by SDL LiveContent. You can even have multiple skins in use with SDL LiveContent, to provide multiple looks and feels for a single information source!

Q Is anyone developing S1000D documentation for output to PDF? If so, what specification/MIL-STD governs the page format/layout?

The PDF output is where we see the most varied requirements from our customers. Our Navy customers take the S1000D and make it look like a 24784C MIL-STD publication. This means that sailors in the field have the same look and feel to their IETPs, regardless of whether the source data is in S1000D or 24784C. A default set of SDL XPP styles for producing the PDF is delivered with the publication, but they are always modified or enhanced to meet a customer’s specific output specifications, which always seems to deviate from the S1000D standard.

CSDB

Q What does CSDB stand for?

Common Source Data Base

Q What is involved with supporting different S1000D “Issues”? Can I up-/down-convert if needed?

The Contenta S1000D CSDB manages the different issues of S1000D for you. No up/down conversion is needed. (See response to same question above.) However, if you want your older data modules based on an older issue of the specification to have
all the same capabilities as data created for use with a more recent issue of the specification, you will need to convert the data to take advantage of the new features of that issue.

Q Do I have to up-convert every time a new issue of S1000D is released?

Answered Above

Q Can I support more than one Issue simultaneously for different products or customers?

Answered Above

Q Are there hosted solutions available?

Depending on the size of the need, SDL is creative to support licensing models – hosted, SaaS, perpetual.

Additionally, there are service organizations who are preparing to offer hosted S1000D solutions with SDL technologies. We can certainly put you in touch with them if interested.

Training

Q What training is available? Where? How much does the Training cost?

SDL provides non product specific S1000D specification and use training as well as application/solution-based training for SDL’s suite of S1000D tools. Training is provided on-site at a customer facility, at our corporate offices in Wakefield, MA or at any offsite location that is mutually agreeable. If you are interested in detailed training descriptions and costs. Please e-mail your request to AskAnS1000DExpert@sdl.com.
Q: How long would it take a person who has a concept of knowledge management, but little experience to know your product?

<table>
<thead>
<tr>
<th>Primary Responsibility</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SDL</td>
<td>SDL Workshop (out-of-the-box)</td>
</tr>
<tr>
<td>Customer</td>
<td>Learn S1000D</td>
</tr>
<tr>
<td>Touch Points</td>
<td>XML/S1000D Content Structure</td>
</tr>
<tr>
<td>IT / Admin</td>
<td>Setup and Configure Server</td>
</tr>
<tr>
<td>SDL or Consultant</td>
<td>S1000D Authoring Training</td>
</tr>
</tbody>
</table>