S1000D 101

contiem

This introductory guide to S1000D is produced by

CONTIEM, LTD.

This guide is intended to help readers understand the broad concepts and requirements of starting to use S1000D to create technical publications for aerospace, defence, and wider applications.

It is not a 'how to write S1000D' guide. It is designed for decision-makers, planners, team leaders, and managers to understand the broad concepts and impacts of undertaking a move to S1000D while giving authors and illustrators a quick foundation in the principles of S1000D.

Contents

Introduction

This guide is based on Issue 6 of S1000D, and as such, some terminology and chapter numbers in the Specification may have changed from earlier versions. This guide is not an authority on S1000D and if any information conflicts with something in the Specification, S1000D should be followed.

Throughout the guide, chapter numbers in **bright purple** relate to the Specification. A small list of helpful abbreviations is at the back of the guide.

This guide serves as an initial foundation for understanding key aspects of S1000D. While it does not cover every detail, Contiem's Aerospace and Defence Team has deep expertise in S1000D and is ready to assist you in navigating its complexities, whether you are just getting started or looking to advance your implementation.

Contiem wishes you success in your S1000D journey!

Contiem

What is S1000D?

Within the pages of the S1000D specification, S1000D is defined as an:

International specification for technical publications using a common source database.

Let's break that down:

International Specification	A global standard with very good adherence and collaboration from multiple nations and projects.
Technical Publications	The maintenance, operation, and supporting documentation for…planes, trains, and automobiles! And systems, and tax…and, well, anything that would benefit from structured information.
Common Source Database	The big bucket of information…(or buckets!)…but hopefully, with some controls and automation to help you manage all the assets that make up an S1000D project.

About S1000D

S1000D was originally developed by a consortium of military aircraft manufacturers in Europe, under the leadership of AECMA (now ASD), to exchange technical information about the aircraft they were jointly building. It was an SGML standard and provided the information required by maintainers to fit, remove, diagnose, and repair systems and components on the aircraft. It heavily used aspects of ATA100 to provide a structure for codifying the systems and components, although it extended this to include further levels of breakdown. This became the Standard Numbering System (SNS).

The early releases were known as Changes. Change 6 was the first publicly published version and introduced operator information in addition to maintenance (the Crew data module types). When the Standard's management committee was looking to publish Change 10, they decided to rename it as Issue 2.0, and the previous Changes became retro-referred to as Issues 1.6 to 1.9.

Issues

Issue	Release date	Base language	Comments
1.6*	31 Mar 1995	SGML DTD	• First public release • First use of Crew
1.7*	1 Feb 1998	SGML DTD	
1.8*	31 Jan 1999	SGML DTD	
1.8.1*	31 May 2000		Amendment release
1.9*	1 Apr 2001	SGML/XML DTD	First use of XML
2.0	31 May 2003	SGML/XML DTD, XML schema	First use of XML schema
2.1	29 Feb 2004	SGML/XML DTD, XML schema	Yes, they did a leap-year issue
2.2	1 May 2005	SGML/XML DTD, XML schema	Introduced BREX
2.2.1	1 May 2006		Amendment to XML schema
2.3	28 Feb 2007	SGML/XML DTD, XML schema	
2.3.1	1 Feb 2009		Amendment
3.0	31 Jul 2007	SGML/XML DTD, XML schema	• Included a lot of Civil Air Working Group requirements • Introduced the TIR
3.0.1	1 Feb 2009		Amendment
4.0	1 Aug 2008	XML schema	• Now only based on a flat XML schema • TIR became a CR
4.0.1 4.0.2	12 May 2009 9 Oct 2013		Amendments
4.1	31 Dec 2012	XML schema	
4.1.A 4.1.B 4.1.C	31 Oct 2014 30 Jun 2017 12 May 2020		Amendment numbering becomes .A, etc
4.2	31 Dec 2016	XML schema	
4.2.A	31 May 2016		• Spec only • No schema change
5.0	28 Jun 2019	XML schema	
5.0.A	1 Nov 2019		• Spec only • No schema change
6	17 Sep 2024	XML schema	S1000D is dropping all *.x* sub-issues

* These were previously known as Change 6 to Change 9.

If you receive an S1000D data module and want to know what version it is, look for the SGML or XML declaration in the file.

In earlier SGML versions, look for the date and match it to the Issues table:

```
DMODULE PUBLIC  "-//S1000D//DTD S1000D Description 20070228//EN"
```

This is Issue 2.3 SGML.

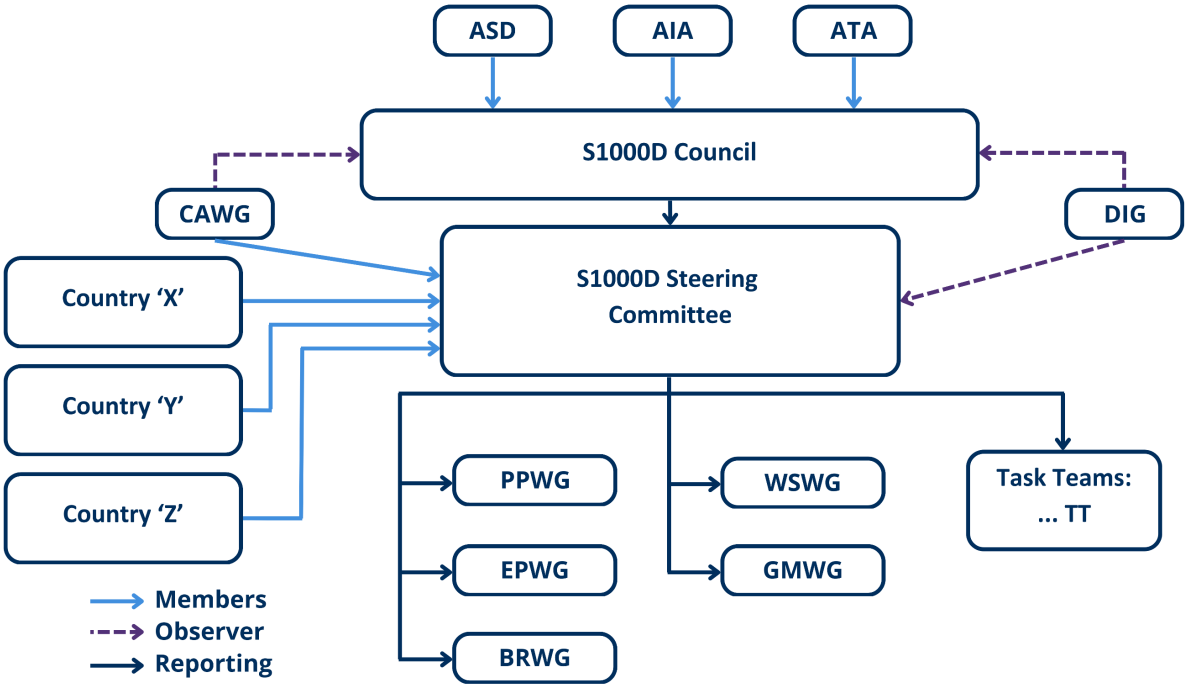
In later XML versions, it is easy; the version is written in the declaration:

```
xsi:noNamespaceSchemaLocation=
http://www.s1000d.org/S1000D_4-1_/ xml_schema_flat/descript.xsd
```

This is Issue 4.1 XML.

Structure

S1000D is governed by the S1000D Council, made up of members of the parent organisations—ASD, AIA, and ATA. The Council provides strategic direction to the S1000D Steering Committee. The Steering Committee is made up of members of country industry and defence representatives, the chairs of the Civil Air Working Group and Defence Interest Groups, plus chairs of the S1000D working groups. The Steering Group manages the maintenance and development of the Specification, including the review and implementation of Change Requests.



Understanding the Specification

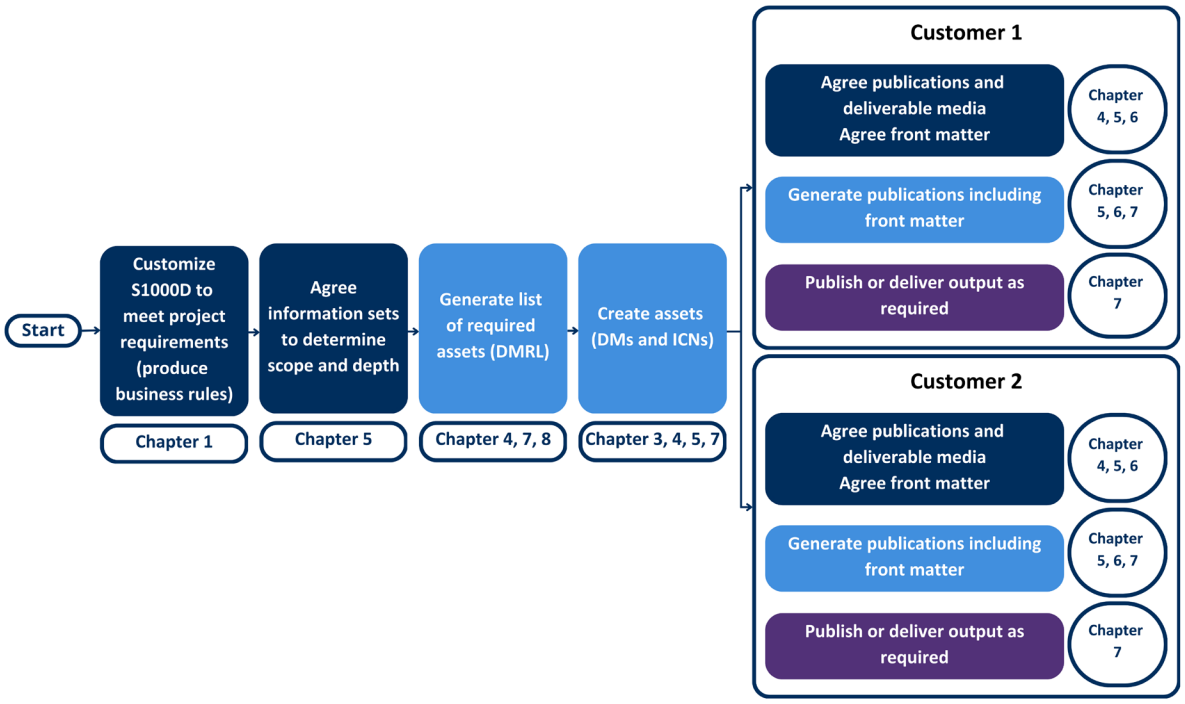
The latest Issue 6 of the Specification document contains over 3,600 pages! However, the chapter structure has remained the same throughout its life to aid users in moving from one Issue to another.

Chapter Description

Chapter	Title	Description
1	Introduction to the Specification	• Purpose • Scope • How to use the specification
2	Documentation Process	• Overview of the documentation process • Relation to other standards • Business processes
3	Information Generation	General rules including: • Authoring • Illustrations
4	Information Management	• Data module structure • Rules for: ➢ Interchange ➢ Updating data modules
5	Information Sets and Publications	Common and specific requirements for information sets and publications
6	Information Presentation and Use	Information presentation and functionality for page-oriented publications and Interactive Electronic Technical Publications (IETPs)
7	Information Processing	Information for the IS/IT specialists, including: • Document Type Definitions (DTDs) and schemas • Graphic and notation specifications • Resources • Resolutions • Interchange conventions
8	SNS, Information Codes, and Learn Codes	Descriptions of the numbering systems and the information codes
9	Terms and Definitions	• Glossary of terms and abbreviations • Data dictionaries

Using the Specification

Although the Specification is extensive and very comprehensive, there is a logical way to use it.



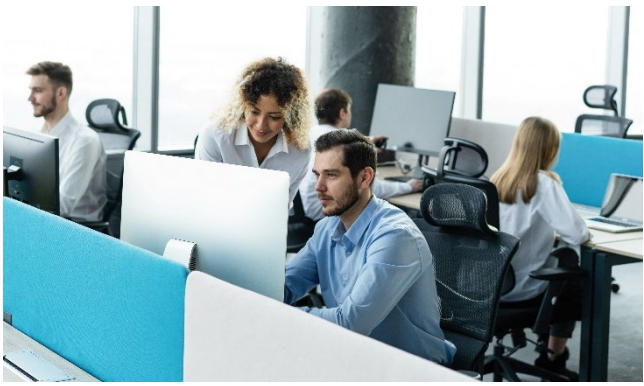
Depending on what stage of planning (dark blue), production (light blue), or delivery (purple) you are in drives what information you need to be drawing from the Specification. Indeed, most of these elements will be planned (i.e., how to actually write DMs in accordance with the Specification), but the diagram should help you identify the application of the content.

S1000D Benefits

The S1000D Specification is accepted and is now even expected in defence and aerospace manufacturing. It has made huge gains in civil aviation and the transport sector. Over the years, it has become well supported by the Technical Publication sector of industry. Although the specification started as a European-only supported document, the user base now includes much of the industrial world with large centres of activity in Europe, Australia, North America, Asia, and the Middle East. Some of the benefits include:

- Non-proprietary information
- Easy exchange of data
- Capability to link with source data, e.g., Logistic Support Analysis Requirements (LSAR)/other S-series
- Lowered document distribution costs
- Reduction in the production and amendment time for the documentation
- Enhanced accessibility and more efficient retrieval of documentation for end users
- Web-based technology
- Improved data integrity and production of higher-quality documents
- Delimited objects of information, rather than the traditional paper-bound constraints
- Adaptable and successful application to legacy data
- Maintained Standard since the mid-1980s
- Active user community

Training



When introducing S1000D to your team, match the training to the learner. Whether it be a manager or a writer, consider this information when deciding what to share.

Managers and Decision-Makers

Those in charge of technical publication teams, contracting for work and projects, and resourcing the business need to understand the principles of S1000D.

This includes:

- Information management
- Governance of data
- Output requirements

These items are crucial because they drive the skills and technology you require to successfully produce S1000D content. Whether you are sub-contracting for services or running your teams and software in-house, these costs will have significant impact on the bottom-line of the project.

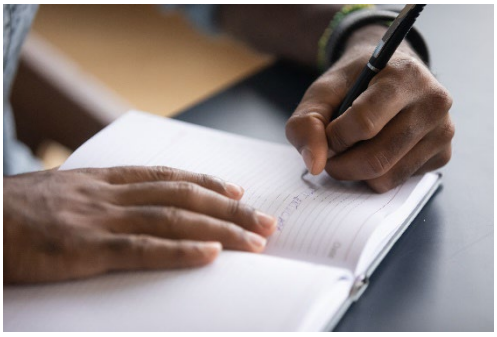
- Staff and time taken to produce output
- Software tools and licences
- Cost of rework and mistakes

Understanding the requirements of implementing S1000D and the resources you need to do so will help you budget for your project. It will also help you understand the timescale involved in setting up your team and systems, in converting or creating data, and the ongoing overhead of updates and amendments.

The biggest cost of all is if something goes wrong that is attributable to your content. S1000D provides several layers of governance: validation of content against the required structure, compliance checking against business rules, verification of content in 1 or 2 stages, and even management of versions for each asset. These are all designed to make your data correct and, therefore, safe and fit for the purpose as possible. These processes will add time and complexity to the project, but this is far outweighed by having a strong safety case for your data.

Authors and Illustrators

Authors and illustrators also need training to use S1000D, but from a different aspect than the managers and decision-makers.



S1000D is a very rules-based information standard. This applies to both the content creation and the structures of how that content fits together to create your project deliverables.

Even illustrations have specific rules for how they should look and be presented and how they are managed, stored, and delivered.

Authors will need to understand structured authoring using the XML (or SGML) structure provided in the project's version of the Specification. In addition to being able to author S1000D, they must understand any business rules, company processes, and requirements for data integrity and use any software tools for the authoring and storage of all these assets.

Writing S1000D

Knowing the business rules and processes is important from a project point of view, but the author's most demanding task is ensuring precise and compliant S1000D documentation. Like any structured language, S1000D data is saved as plain text. You could open any text editor and write S1000D. However, manually incorporating the necessary complex structure around your content would be highly inefficient and nearly impossible to execute accurately.

Many Commercial Off-The-Shelf (COTS) packages allow you to write good XML and SGML. They can show mistakes in the structure and make sure you comply with the Schema or DTD. However, the real need for anyone authoring S1000D is to have an integrated system that:

- Uses a stylesheet to help authors understand the document structure and layout;
- Has tools for inserting complicated external links and references;
- Helps manage internal references like figures and tables; and
- Creates compliant S1000D.

Various providers offer tools for creating and editing S1000D content. These range from online applications and standalone software to plugins for widely used technical authoring tools. These integrate S1000D functionality while leveraging the capabilities of the underlying platform.

One of the most varied but critical features is the stylesheet. As discussed in more detail in the Understanding Structured Content section, XML does not contain formatting information, so the presentation on the editing screen comes down to the stylesheet. For authors accustomed to traditional word processing or WYSIWYG environments, an application like Adobe FrameMaker may be more suitable, as it provides a paginated view of S1000D content formatted to resemble the printed Specification. For authors accustomed to writing structured content, a focused XML/SGML editor like PTC's Arbortext or SyncRO Soft's Oxygen may be more efficient.

Contiem's Eclipse S1000D plugins for FrameMaker, Arbortext, and Oxygen cover all Issues of S1000D in XML and SGML. With comprehensive authoring capabilities and seamless integration with notusCSDB, they deliver an unparalleled authoring experience.

Explore the Websites

Data Modules

(See Chapter 3.2 of the Specification)

Data modules are intended to contain small topics of information. They use the system breakdown to determine the subject of the content, and the information code to determine the topic of the content. One data module should only contain one piece of content but can be reused wherever that content is needed.

Data Module Types

There are a range of data module types that have been developed over the various Issues of S1000D. These enable an increasingly large number of specific structures to be accommodated. Some of the data module types provide the means to directly input data that is to be seen by the end user. Other data module types are used as supporting mechanisms.

The following list shows all possible types of Data Modules (DM). It should be noted that some DMs are not intended to be authored by normal editing software. Examples of these are the IPD, Process DM, and the Wire Data and Wire Fields modules.

Data Module Type *Not all data module types are available in all Issues.*	Content Type	Supporting Type	Designed for Print
Applicability Cross-reference Table		✓	
Business Rules Document		✓	
Business Rules EXchange		✓	
Checklist	✓		✓
Comment		✓	
Common Repository*		✓	✓
Conditions Cross-reference Table		✓	
CSDB Status List		✓	
Container		✓	✓
Crew (Aircrew pre-2.0)	✓		✓
Data Dispatch Note		✓	
Description	✓		✓
Data Module Requirements List		✓	
Fault (Air Fault pre-2.0)	✓		✓
Front Matter	✓		✓

Data Module Type *Not all data module types are available in all Issues.*	Content Type	Supporting Type	Designed for Print
Information Control Number Metadata		✓	
Illustrated Parts Data	✓		✓
In-Process Review Form		✓	
Learning	✓		
Publication Module		✓	✓
Publication Cross-reference Table		✓	
Procedure	✓		✓
Process		✓	
Service Bulletin	✓		✓
Schedule		✓	
Shareable Content Object Content	✓	✓	
Shareable Content Object Reference Model Package	✓	✓	
Technical Conditions Cross-reference Table		✓	
Technical Repository*		✓	✓
Update		✓	
Wire Data		✓	
Wire Fields		✓	

*The Technical Repository (TR) and Common Repository (CR) are designed to hold information that is inserted into other data modules at print time (whether actual paper or electronic delivery). They are not designed to be printed themselves.

Data Module Construction

(See Chapter 3.2 of the Specification)

Most data modules have two (2) main sections: the identification and status (ID&Status) and the content. The content can vary greatly depending on the data module type.

ID&Status

The ID&Status area of the data module contains management and governance metadata. It is divided into two main areas: identification and status, each with a clearly defined function.

The identification section contains the Data Module Code (DMC), data module title, issue and in-work numbers, issue date, and language information.

The Status section contains data that allows the user to determine the current state of the data module. Data stored includes security, data usage and distribution, technical standards, quality assurance, applicability, skill level, and Business Rules Exchange (BREX) link, etc. It can also contain the Reason For Update (RFU) data, which can be collected at publish time to generate change information automatically.

Data Module Code

(See Chapter 4.3 of the Specification)

A complicated project with lots of systems and sub-systems, each of which might require many documented procedures (e.g., remove, test, repair, install), can produce thousands of data modules. To keep track of all this information, S1000D defines a structured codification.

The DMC is broken down into a set of sub-elements that define different parts of the information.

A typical DMC looks like:

CONTIEMPUBS-N02-U30-30-00-00A-040A-A

Let's break that down:

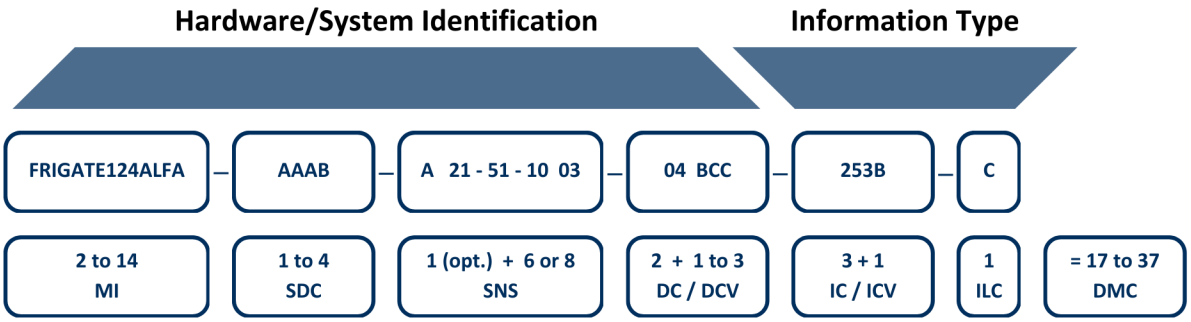
Element	Description
CONTIEMPUBS-N02	This defines the project and any sub-versions.
U30-30-00-00A	This is the SNS and disassembly code and gives a system's break-down to identify the piece of equipment and its components.
040A	This is the information code (infoCode) that identifies the topic.
A	This is the location code that identifies where the topic is performed.

DMC-CONTIEMPUBS-N02-U30-30-00-00A-040A-A_001-00_EN-GB.xml

When written as a file name, DMC is added at the beginning, and two (2) other parts of information are added after the location code:

Element	Description
001-00	This is the Issue number and in-work number that gives the status of the data module.
EN-GB	These are the language and country ISO codes. This example is written in English, using the British English dialect, spellings, etc.

Overall, the DMC can vary in length from 17 to 37 characters, but the structure has remained the same from the very beginning to now. Management systems and users can still recognize and 'read' the DMC.



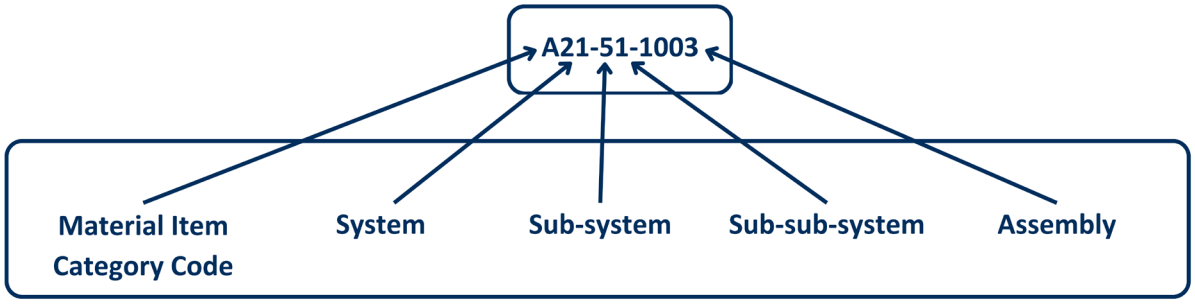
Element	Description
MI	Model Identification Code
SDC	System Difference Code (any subset or variant of the model)
SNS	Standard Numbering System (identifying the assembly)
DC/DCV	Disassembly Code and Variant (the breakdown of assemblies for maintenance)
IC/ICV	Information Code and Variant (the topic being documented)
ILC	Item Location Code

Standard Numbering Scheme

(See Chapter 4.3.3 of the Specification)

The primary function of the SNS is to give a hierarchical breakdown of the product into systems, subsystems, sub-subsystems, and assemblies.

The System, Sub-system, and Sub-sub-system correspond to ATA's Chapter, Section, and Sub-section. These terms were used in earlier versions of S1000D. The SNS is again made up of several parts:



Element	Description
A	Material Item Category Code (MICC)—optional character; identifies whether a maintained (S1000D published) or project custom SNS structure is in use
21	System—top-level hierarchy (previously "chapter")
5	Sub-system—2nd tier hierarchy (previously "section")
1	Sub-sub-system—3rd tier hierarchy (previously "sub-section")
1003	Assembly—a non-hierarchical entry • It can be either 2 or 4 characters • 2 alphanumeric characters (even avoiding 'o' and 'i' to avoid confusion with 0 and 1), giving 34x34 possible entries = 1156 • 4 characters should only be used in incredibly complex systems, as that gives over 1.3 million possible items

Once you have identified the sub-sub-system using the hierarchy, each assembly should be given an identifying index number. This is the assembly code.

Consider an aircraft engine fuel pump as an example:

- The MICC+SNS specifies which aircraft (and variant).
- The System specifies engine fuel and control (e.g., 73).
- The Sub-system specifies fuel distribution, which includes pumps (e.g., 1).
- The Sub-sub-system identifies the specific pump (the code will be project-specific).
- The Assembly code can identify the main assemblies that make up the pump (e.g., housing, motor, control systems, valves, etc.).

Disassembly Code and Variant

(See Chapter 4.3.4 and 4.3.5 of the Specification)

The disassembly code allows for the break-down of an assembly into its component parts for servicing or replacement. The disassembly code is two (2) alphanumeric characters.

The variant element allows for changes in the part supplied. The fit and function of a component may be identical, but due to obsolescence or changes in the supply chain, the component itself might be different and require different processes to test or repair.

The disassembly code variant is 1 to 3 alphanumeric characters and is often linked to LSAR identifiers for components.

Information Code

(See Chapter 4.3.6 and 4.3.7 of the Specification)

The information code identifies the topic of the Data Module. S1000D maintains a detailed list of information codes (see **Chapter 8.4**).

Variants come from different processes that achieve the same result. For example, you may be X-ray testing for stress fractures but have two (2) different machines at different sites—two (2) different methods, but the result is the same.

Item Location Code

(See Chapter 4.3.8 of the Specification)

The item location code tells you where the topic content should be undertaken:

A. Done on the product
B. On a major assembly removed from the product
C. On the bench
D. Any of these

There is also “T.” for training information.

Information Control Number

(See Chapter 4.4 of the Specification)

The Information Control Number (ICN) is a number given to identify any supporting media items. In early versions of S1000D, this was the Illustration Control Number, when the supporting media was typically just line drawings and photographs.

With rich media now including video, 3D, and even augmented or virtual reality, there are many additional files that can be associated with your publications.

The ICN can either be based on the Model Identification in a similar way to the DMC, or it can be given an arbitrary code based on the manufacturer's CAGE code and an index number.

As media items generally cannot contain metadata, most of the important information is contained in the file name.

Note: In Issue 4.2, a new data module type was introduced to hold supporting metadata for a related ICN.

Model Identification

Prefix	Model Ident. Code	System Diff. Code	Model Ident. + SNS	Responsible Partner Code	Originator CAGE	Unique Ident. Index	Variant Code	Issue Number	Security Code
ICN	YY	Y	YYYYYYY	Y	YYYYY	NNNNN	A	XXX	XX
ICN	YYYYYYYYYYYYY	YYYY	YYYYYYY	Y	YYYYY	NNNNN	A	XXX	XX

CAGE Code

Prefix	Originator CAGE	Unique Ident. Index	Issue Number	Security Code
ICN	YYYYY	YYYYY	XXX	XX
ICN	YYYYY	YYYYYYYYYY	XXX	XX

For both versions, the originator CAGE is included to show who produced the ICN. The issue number works the same way as data modules and allows for tracking changes and version control when linked to a DM. The security classification code is also the same as for DMs. Note the security should apply to the ICN content, not just take the same code as any DM to which it is linked.

Project Setup

When setting up a project, there are some specific things to consider, such as the numbering system and data management.

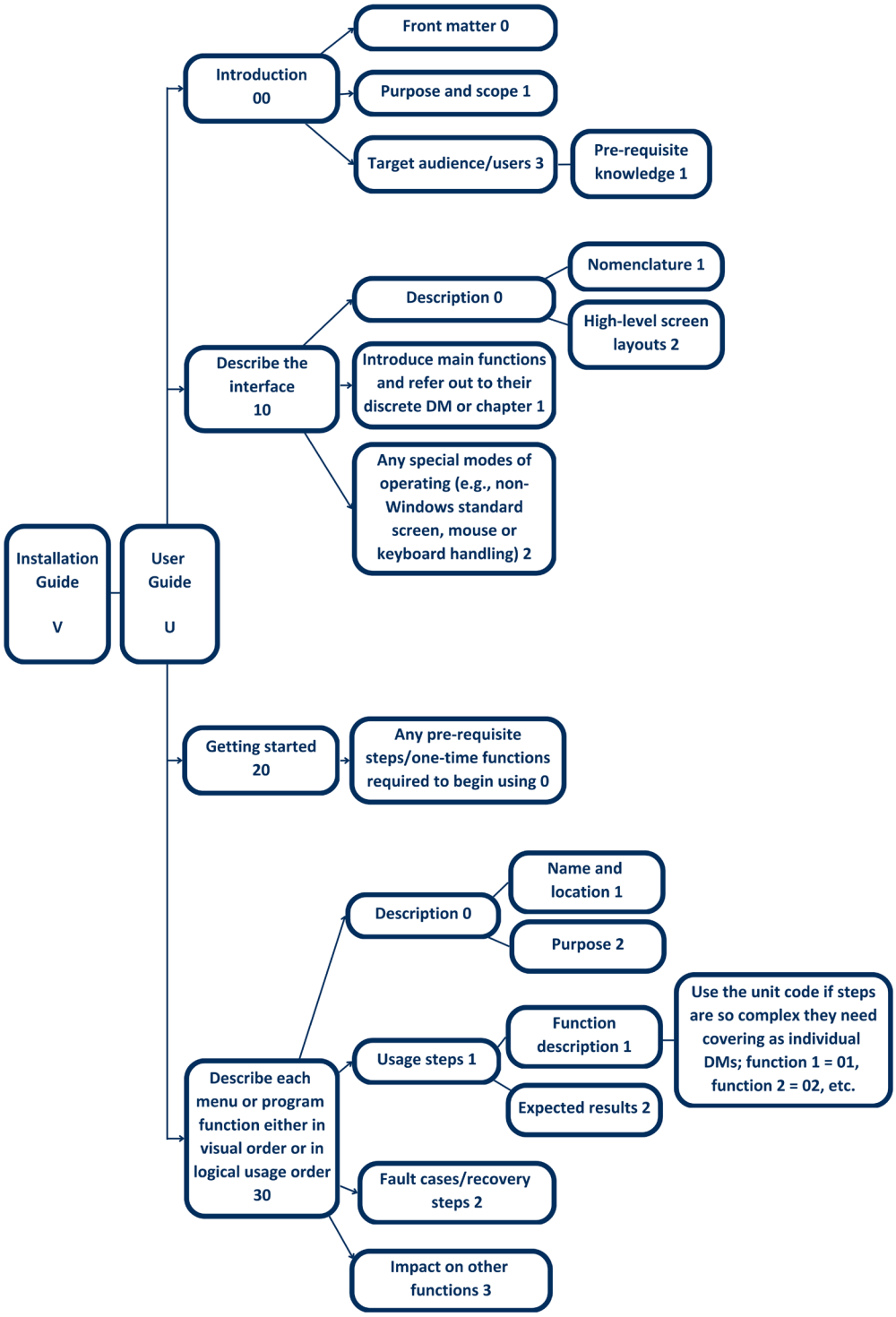
SNS

One of the first things a new project will need is a working SNS to start identifying the systems and components needing documentation. You can start with an existing S1000D SNS, use a top-level SNS provided by a manufacturer, or build one from scratch.

For physical products, the breakdown naturally follows the item's structure—main systems, subsystems, sub-subsystems, and their components. Much of this information comes from an LSAR system.

A different approach may be needed for non-traditional projects, like using mind-mapping software to model SNS structures for software user guides, providing a clear visualization of the hierarchy.

This is a section from a mind map that breaks down the layout of the software user guides.



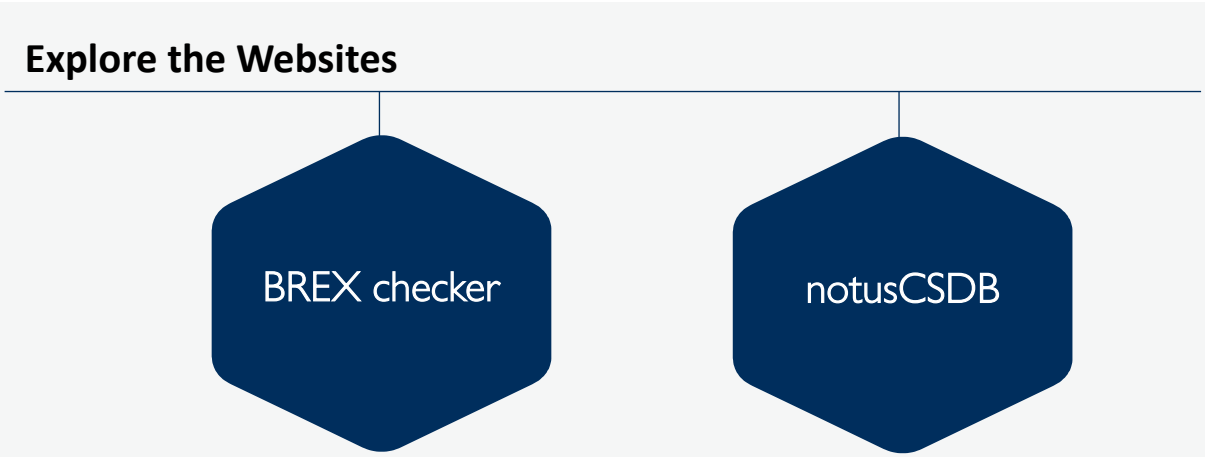
BREX

(See Chapter 4.10 of the Specification)

The Business Rules Exchange (BREX) is a special DM written to automate checking your content DMs to ensure they comply with any business decisions.

S1000D includes numerous decision points that impact the structure and content of data modules. While it provides tools to make and catalogue these decisions, authors must navigate complex requirements, which often take precedence over the DTD or Schema—meaning content may comply with S1000D but still violate business rules.

Automated validation against a well-structured BREX file can streamline compliance, save time, and prevent errors when delivering to third-party primes. Contiem offers a standalone BREX checking tool that validates single or batch DMs against a specified BREX DM with error reporting. This functionality is also built into our Common Source Database (CSDB).



DML

(See Chapter 4.5 of the Specification)

The Data Management List (DML), sometimes called the Data Management Requirements List (DMRL), is a project-generated catalogue of all required DMs for documenting the processes, procedures, and supporting information for the safe and efficient operation of a product.

The DML is derived from the SNS (system components) and required information types (processes and descriptions for each component). It begins as a DMRL in the planning phase and evolves into the DML as DMs are written and ICNs are produced, serving as a comprehensive record of project assets.

Given its complexity, the DML is often generated from LSAR systems and used to populate a CSDB, which maintains and updates it as the project progresses.

Asset Management

By now, you should begin to understand just how many assets a project may need. More importantly, when you consider version control of those assets and all the interlinking between items that refer to each other, what a huge management task you might have!

For small projects with minimal changes, a simple file system and spreadsheets may suffice as a CSDB. However, a true CSDB offers much more. It manages workflow, tracking an asset's lifecycle from creation to quality assurance and release. It ensures version control, identifying dependencies where one change may impact others.

More importantly, it enforces data governance—Was it duly checked and authorised? Who did the editing? Who did the checking? Did they have the necessary skills and knowledge? Were there certificates or comments from the customer or an engineering authority? The CSDB tracks approvals, edits, and author credentials while maintaining records of customer or engineering authority feedback. These controls validate each asset, making a robust CSDB essential for effective data management.

CSDBs come in all shapes and sizes and you should choose carefully when deciding what is right for your project. Every CSDB should do similar basic functions:

- Manage assets
- Assign assets for work and check them in when complete
- Add attachments with supporting information
- Track relationships between items
- Keep a history for every asset

Beyond that, you need to consider publishing functions, import and export, management of applicability, Common Repositories, links to LSAR systems, etc.

Of all the tools you will need, the CSDB can have the biggest impact on managing your project. Contiem's successful notusCSDB is designed to be lightweight, intuitive toward use and therefore easy to learn.

Explore the Website

Converting Existing Material

When you are converting your existing material, consider the structure and output type.

Understanding Structured Content

Structured content is a term applied to data and document types where the content is stored in plain text (think Windows Notepad) but is marked up with tags that give the content meaning. XML and SGML are structured languages.

A structured language allows us to define which tags are available and whether they are required, optional, or even prohibited in certain contexts. This is how a standard like S1000D can give a controlled environment for the production and management of important (sometimes life-critical) technical information.

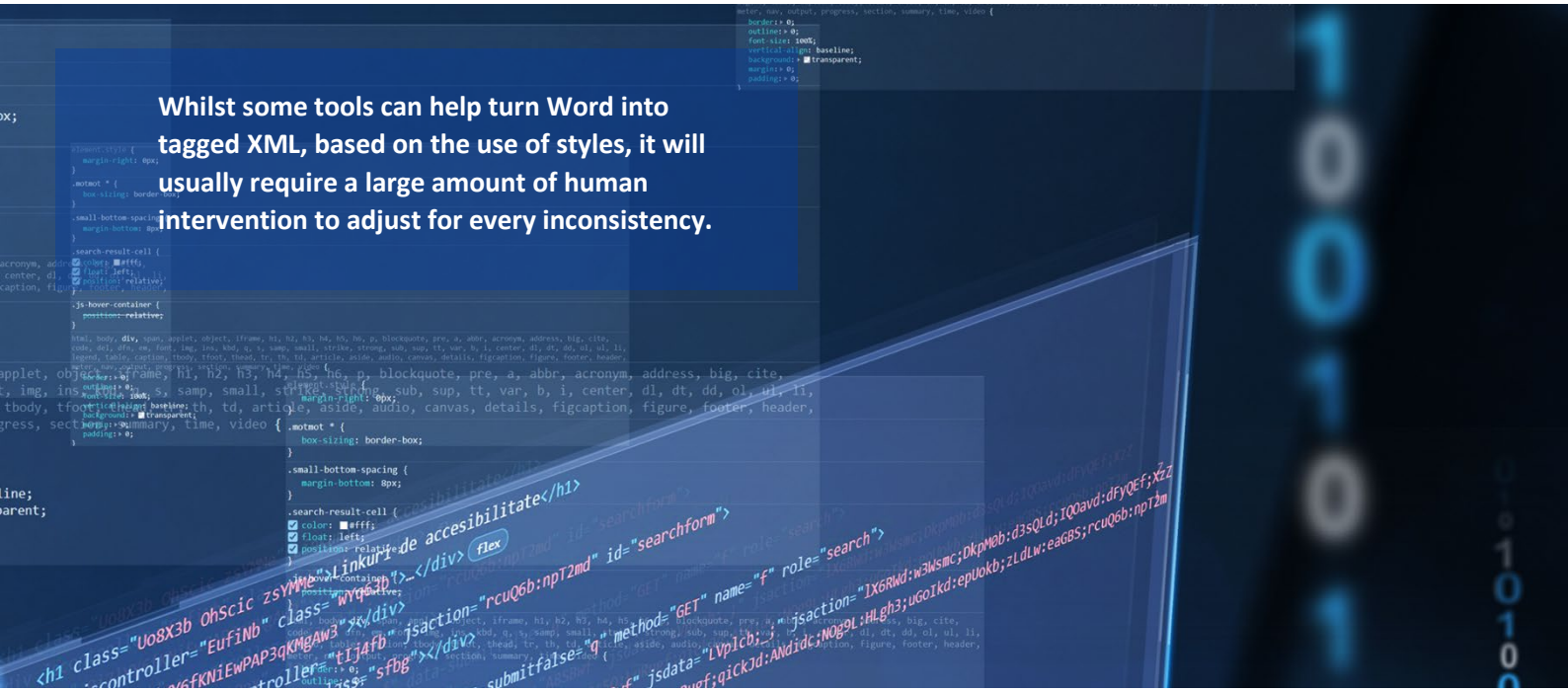
Legacy Unstructured Content

Smaller producers often do not have the copious spare resources to consider implementing complicated document management systems, and so it can be very daunting to first bid for a project that requires something like S1000D.

Often, legacy information that you already have is produced using some form of common word processing software, such as Microsoft Word.

This is an economical option, but because there is little control, documentation can be of poor quality, illogically written, confusing if inconsistently presented, and so on.

However, moving from legacy content to S1000D can be a major challenge. Aside from mapping content down at paragraph, figure, and table level, you also need to spend time deciding how to break the information down from the current document flow into the DMs and infoCodes the S1000D requires.



Other Structured Content

If you are fortunate enough to have used a previously structured language for your content, it may be slightly easier to convert to S1000D.

You need a thorough analysis of your current Schema to understand which items can automatically map to an equivalent S1000D element and which need some additional manipulation or structuring. You may still need to decide how to divide your information into logical infoCodes and an SNS structure.

There is no easy, one-click conversion solution for any form of content, legacy, structured, or even a previous major Issue of S1000D. Contiem's consultants have years of experience handling many types of data and can help you decide the best approach between automated conversion, some form of cut and paste, or just re-keying from scratch.

Understanding Deliverables

S1000D is primarily designed to be delivered electronically. By using XML (or SGML) the content is separated from the constraints of any output platform. By using stylesheets, Contiem can provide a format at the point of delivery that suits the mechanism in use for that specific user.

The same content could be printed on paper, sent to a computer viewer, resized to suit a tablet or smart device, displayed on a head-worn display system, or even played through a text-to-speech reader to a remote location with no screens available.

DMs (and ICNs)

If you deliver to another contractor, you will often only need to send the actual assets—the DMs and ICNs. S1000D specifies using a Data Dispatch Note (**Chapter 7.5**), which is a special data module type. It acts as a catalogue of the transfer of a set of assets from one user to another. This is normally a file-based transfer. Some CSDBs may be able to package this up as a compressed archive ready to be extracted into the receiver's CSDB. However, to avoid issues with proprietary compression and extraction, this is most often done as a simple file-based transfer.

PDF or Paper

S1000D gives guidance on the look and feel of printed and electronic output. Although designed to be consumed electronically, by using comprehensive stylesheets, a printable output can be achieved. Indeed, the stylesheet can go one step further in that content can be presented as a customer's desired standard. The Civil Air Working Group has designed a set of business rules and a Publication Module structure to allow the 'printing' of an ATA Component Maintenance Publication from S1000D data modules.

Many S1000D authoring systems allow the printing of individual data modules to PDF (and then to paper). However, specialist software is required to combine many DMs to make a PDF for an entire manual.

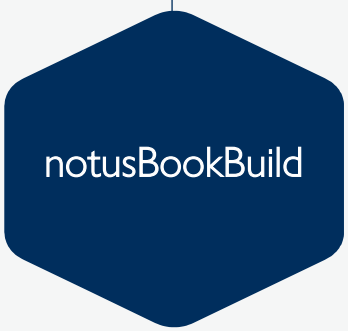
Book Building

Often called BookBuild, book building is the process of taking many assets from a project and creating a traditional book or technical manual.

Using specialist software, multiple DMs can be combined into logical chapters and sub-chapters that make for a more natural, human-readable manual. Some products can automate the generation of content, such as contents, lists of DMs, figures, tables, etc. If the content is appropriately tagged, other information can also be generated, such as lists of acronyms, indexes, and highlights, showing changes to previous versions.

Contiem has one of the market-leading products available to do this: notusBookBuild. notusBookBuild uses the Publication Module as a catalogue for the structure and content of a publication. As well as the generation of content, notusBookBuild supports multiple stylesheets including S1000D, ATA CMP, and the Army Equipment Support Publication and Flight Crew Checklist.

Explore the Website



IETP

The final delivery type is an Interactive Electronic Technical Publication (IETP). There are many 'levels' of IETP that offer different amounts of functionality and interaction. A hyperlinked PDF, for example, counts as a level 2 IETP.

Many end clients already have an IETP viewer or are constrained to using a particular viewer for commercial reasons. However, whether you are supplying the viewer or supplying data for someone else's viewer, there are generally two (2) steps in the process:

1. Decide on the content of the information set that will become the electronic manual and mark it for export. This might be with a publication module or a data dispatch note. The content will potentially be determined by the DML. The deliverable must include all assets: DMs, ICNs, and any supporting special DM types.
2. Decide on a publication builder. Almost all IETP solutions include some form of publication builder. This tool takes the set of assets and prepares them for display.

The level of IETP will determine the exact processing undertaken. Data may be transformed for display purposes, content may be indexed, and additional tagging might take place on things like applicability.

The final build result will have a basic set of functions—the ability to display the content, including media, and the ability to navigate through the content, either from the top level down or by following links between assets.

More powerful systems will include indexed searching, interaction, the ability to make annotations, submit change requests, order spares, and many more functions.

Whatever the form of your deliverable, the content is still key to a successful product and a happy customer!

How can Contiem help?

The UK office was founded in 1990 and includes a dedicated Aerospace and Defence Team. The Team is staffed with expert consultants who have been working in and supporting this specialist sector for many years.

Contiem Ltd. provides complete end-to-end information solutions. Not only does Contiem Ltd. have a world-class Component Content Management System platform in RSuite®, but our company helps other companies create exceptional technical documentation, eLearning, online help, visualizations, and training materials.

The Aerospace and Defence Team provides some of the best-in-class software and services to meet your S1000D project requirements.

Create

Manage

Publish

Find out more today at Aerospace-Defence.com.

Abbreviations

AIA	Aerospace Industries Association
ASD	Aerospace, Security, and Defence Industries Association of Europe
ATA	Air Transport Association of America, Inc., d/b/a Airlines for America (A4A)
BREX	Business Rules EXchange
CR	Common Repository (also known as a Common Information Repository)
DDN	Data Dispatch Note
DM	Data Module
DML	Data Management List
DMC	Data Module Code
ICN	Information Control Number
IETP	Interactive Electronic Publication
LSAR	Logistic Support Analysis Requirements
PDF	Portable Document Format
SNS	Standard Numbering System
TIR	Technical Information Repository

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