WELCOME

MICHAEL INGLEDEW

Welcome to the spring issue of the TDW magazine and we have gotten ourselves off to a rock 'n' roll start.

We were crazy busy this last quarter. I personally have been supporting some clients closely on major technical publication requirements, travelling and meeting a number of you, but my team have been working equally as hard behind the scenes helping create some quality content for you out there!

In Q1 we ran our first *tester* Innovation in Information event which went down exceptionally well with all our sponsors and delegates, so much so we will be hosting two further events this year, one in the UK and one planned for Germany - more details inside.

In this last quarter we also started our series of LIVE events, both via TD-iQ and our brand new **Thursday Thoughts** broadcasting LIVE to our Facebook page and take some of the many questions we receive and answer them - LIVE! Make sure you sign-up to our Facebook/ YouTube pages to be notified when we hit the live button!

Many of you have already signed-up to our all new **TDW podcast**, at the time of writing we have already published four episodes and have set ourselves a target of recording at least one episode fortnightly. We kicked off with where TDW came from and why I gave up a great, secure, position within a prestigious company and focused my energy on TDW. I hope you like it, it's great fun putting them together - check out our new jingles - we had some made and we are very happy with them, we hope they make you smile as we did!

What else for Q1? Well TDW-Live#8 has already seen almost all exhibitor tables allocated for this years event and we have started the planning of the event early

THE TDW PODCAST

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this year as we want to deliver some exciting new content at the event.

We also welcome aboard Technodata and my old friend Andreas Aust, who joined us in Q1 as a new member company - which leads me on nicely to our new service! **TechDataDirect** making it easier for organisations and projects find their perfect software or services provider! Q2 will see the formal launch. **What else for Q2?** Well we will continue to deliver content that is, we hope, engaging and resonates with your daily challenges as well as something that adds value to your working day! We have introduced a monthly **TD-iQ LIVE lesson** for our TD-iQ subscribers as well as ramping up the free content we make available.

Feel free to connect with me on LinkedIn and send me your questions, comments and suggestions - I am keen to hear what the barriers are in your technical information life!

Enjoy this issue! All the very best - Mike

5PM UK TIME
Thursday Thoughts
LIVE

NEWS - UPDATES - MEMBERS UPDATES - THOUGHTS - QUESTIONS & ANSWERS - LIVE - ONLINE

#TECHDATAWORLD

MECHANISMS OF A **THINKING COMPANY**

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SWINGING THE LAMP

SUMMER ISSUE

NEXT ISSUE - PERSPECTIVES

BACKGROUND IMAGE: FROM OUR TD-IQ COURSE - EFFECTIVE DATA REUSE IN S1000D

What have we been up to in the first quarter of 2018? Here is a brief summary of some of what we have been doing just incase you missed it!

01

Innovation in Information - our first event was held in Bristol, UK - more details inside and a second date has been set for this

02

Welcome aboard Technodata! Our friends down in Bavaria joined TDW as a full member company in Q1

03

TDW launched our full, dedicated, Podcast channel with all episodes now available on iTunes, Google Play and our website

04

Our Thursday Thoughts went LIVE for each Thursday PM - we look at industry news, reviews and answer some questions - broadcast LIVE to our YouTube, Facebook and dedicated website page every Thursday at 5PM UK time.

05

TDW launched our Instagram page - for those of you wanting to keep up with daily updates from us at TDW

06

Multiple renewals of membership shows continued support for TDW and what we are out to achieve!

07

Effective Data Reuse in S1000D was one of our latest full tutorials released to TD-iQ this quarter.

08

The FIVE things we look for in a supplier - a LIVE broadcast for TD-iQ subscribers was beamed around the world.

09

Is S1000D enough? - our second TD-iQ LIVE stream raised some interesting discussion and debate.

10

Multiple road trips took us to, Aspire Consulting, SEMCON, CDG, a Boeing Company, DCS-Sonovision, RTP Technical Publications

11

We launched our brand new TechDataDirect service - making it easier for our clients to find their perfect technical information partner

12

A trip to Switzerland to support a client establish technical publications processes as well as supporting a client identify an IETP solution!

INNOVATION IN INFORMATION #1

2018 kicked off with our first event of the year and our inaugural Innovation in Information event, hosted in Filton, Bristol, UK.

The aim and thought processes behind these "Innovation events" is to introduce those needing to produce and contract for technical information to those innovating and thought leading vendors in the market.

Removing the death by PowerPoint® emphasis of most seminars and focusing on playing with the technology available and discussing with experts the art of possible and engaging with what will affect our discipline in the future.

Delegates in attendance were from the ministry of defence project teams as well as key suppliers to major defence projects.

On Display

CDS DEFENCE SUPPORT – traditional technical publications is changing and at a rapid rate, CDS Defence Support were showing how they have embraced and developed capability around augmented and virtual reality as well as aligning traditional technical publication requirements. A fully interactive demonstration of a virtual military vehicle in the room demonstrated how information deployment has changed - amazing many of the delegates

SEMCON – innovation has been happening in the automotive sectors for many years and SEMCON is at the heart of this drive - on display was augmented and virtual reality practices as well as how mobile apps are changing the way maintainers and operators are engaging with products with some prestigious brands engaging the help of SEMCON.

KAHOOTZ – not a traditional technical publications company but a company with a secure online collaboration tool that could deliver major benefit to those working on collaborative projects. Kahootz showed

CDS Defence Support

semcon

kahootz

Lionbridge

Aspîre - Analyse. Optimise. Deliver.
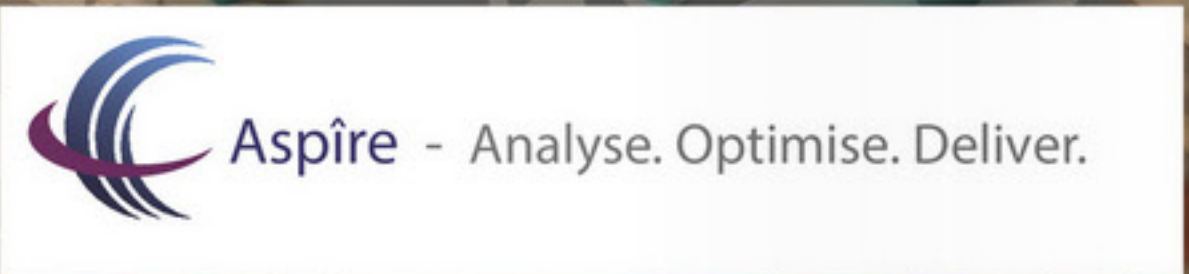
WATCH NOW
highlights from Innovation in Information #1

how their application of technology is enabling organisations to securely share and comment on general documentation production.

LIONBRIDGE – Augmented and Virtual reality, an area where Lionbridge has deep domain expertise. Delegates spent time with the Lionbridge experts looking at the new and innovative methods of deploying technical information by carrying out a maintenance practice right in the conference room.

ASPIRE CONSULTING – part of innovating in information and data collection is not just technology or software based, there is a need to innovate in process and applications of those processes – many delegates were introduced to how Aspire is helping projects and organisations streamline process and aligning those processes with technology.

Delegates were encouraged to play with the technology on display

Innovation In Information

26TH JULY
APPLEBY PARK HOTEL
NR. TAMWORTH
UNITED KINGDOM

HTTPS://EVENTS.TECHDATAWORLD.COM

#2

semcon

HIGH QUALITY, LOW COST TECHNICAL DATA AND PUBLICATIONS FOR THE AEROSPACE INDUSTRY

10

PART 3: FUTURE PROOFING TECHNICAL DOCUMENTATION

AS WE CONTINUE THE SERIES OF ARTICLE FROM ETTEPLAN - PART THREE LOOKS AT THE FUTURE - DID YOU MISS PART 1 & 2? CHECK-OUT THE ARCHIVES ON TD-IQ.

THE OBJECTIVE IN THE FUTURE

The obvious future objective for technical documentation is the advancement to the level where the inception of an ecosystem allows the extensive automation of documentation delivery and service processes. Some development of information networks and additional networking of devices is required, but it's already underway with the big push towards more connected devices, which the IoT-hype has brought us. IoT allows broad automatic distribution of information and provides a global connectivity to any digital documentation.

Looking at the next step, the move from level 4 to level 5 (see Figure 1 in the previous article) calls for us to connect devices in the field to data from manufacturers. The connection requires a new type of data markup as well as system integration. The earlier steps can be achieved just by knowing a machine's serial or a project number in order to give you the right documentation package. These documentation packages can be internally marked up quite well already, as metadata is needed to efficiently build the documentation package, but the metadata and markup is often just known inside an organization and is not visible on the outside.

The need for markup and metadata becomes more extensive and it should be realized before starting the documentation process. Technical documentation should be planned already in the design phase so

it can refer directly to the source data. As such, the information architects should be part of the design process and support the designers with the product structure creation and spare part definition. Having the documentation organization in the loop from the start will also help sourcing by providing details on documentation requirements for purchased components. This way the spare parts can be identified already in the design phase even from purchased components, the spare part documentation will be available ahead of the equipment delivery and critical spare parts can be stocked at the time of delivery. Connecting the spare parts data to the design structures also makes the existing spare parts data automatically available to new equipment that reuses components from previous projects.

CHANGING THE MODE OF OPERATION

Figure 3 (see previous article) illustrates how technical documentation supports the whole life-cycle of the product, which requires changes in the day-to-day operations of the service organization. In addition, product design needs to accept the role of technical documentation and the required up-front information architecture, which goal is to provide long term support for the equipment, already in the design phase. Documentation should work as a lateral organization bridging together different domains and processes and supporting the business of other parts of the organization, as the technical documentation organization is experienced in localization and information management which benefits other business areas as well.

By developing documentation data models

and supporting other organizations and processes that create and use data, technical documentation can bridge the gap between different parts of the organization where information can move both directions and where legacy data can be linked to new data to increase the value of information. For example, an error code provided by the machine control system can be attached to relevant instruction and spare parts information. Information from the field can be connected to a specific machine and part, making feedback from the field easier to understand and distributed to the right people. Documenting life-time changes is also a lot easier as any observations made in the field can be attached to other relevant data and the right machine/component. Information gathered during the life-cycle of the machine is all collected in one place with the information that was created when the machine was first designed and build in order to provide a complete picture of each machine. The connected information can then be used very efficiently to support decision-making and to guide design, development and the refinement of the documentation itself, because it is easier to understand the complete picture, due to the contextual information.

HOW WILL THE MATURITY GOALS FOR THE DOCUMENTATION BE ACHIEVED?

It can be stated on a generic level that all processes that create or use information during the life-cycle of the product need an information system, where the data can be governed. The different information systems need to be linked to each other, so information can be transferred between systems. A way to create different views of the data is also needed to create value from it, as data by itself is not that usable. A more detailed look into integration and tooling is unnecessary in this context, as there are various systems available on the market that can provide the needed user interfaces and data integration is almost always case specific. In any case, the central elements of these kinds of system integrations would be company data, product data and sensor (IoT) data, as well as the various distributions

channels that provide information to end users. To support this kind of extensive system integration a new information model should be created to work as the basis for the new ecosystem.

INFORMATION MODEL

Figure 4 illustrates different types of information that needs to be connected for a comprehensive information model for technical documentation. The information model allows lateral movement between different information with the key elements, which provides new type of automation and troubleshooting possibilities. This schema is just a simple example and would in real life be more complex, because the key elements need to create unique instances of objects. For example, both component and electrical component IDs are required for recognition of an electrical component in a machine. The schema gives a basic idea of how to connect the information to make it more understandable, accessible and usable throughout the whole life-cycle.
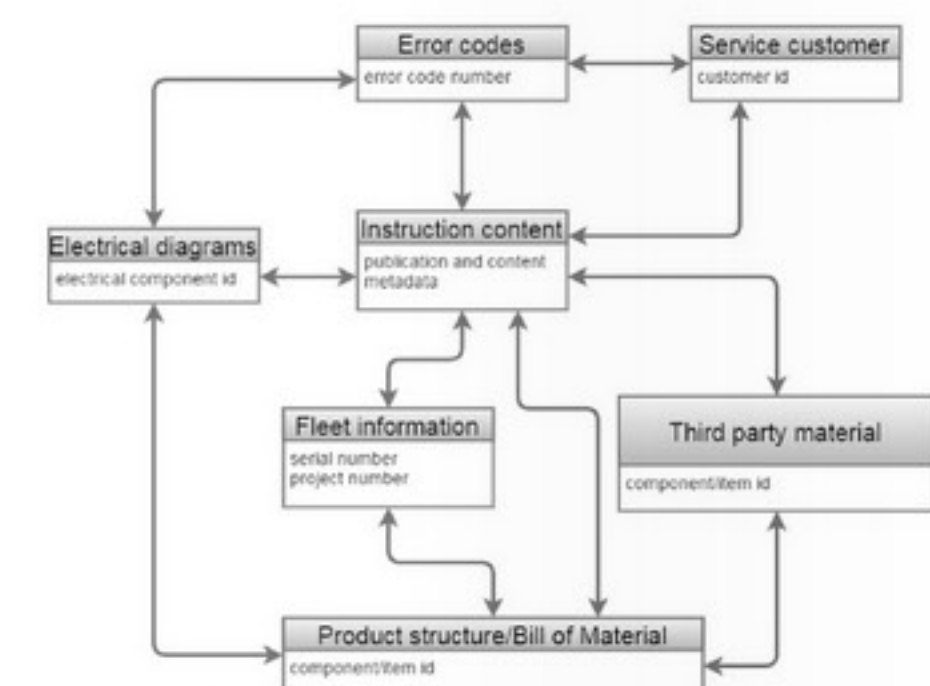

Figure 4 The key elements for connecting different information types used in technical documentation

An important factor is the integration and linking of information to make the information networked and more semantic. The creation of an information model allows new information to be connected to existing information, which allows the automatic integration of information and the automation of later processes that use the

information. For example, take an electric motor, which has a unique component ID and an electrical ID. The motor can also have error codes and alarms, in case of overheating. The motor also has optional components that are specified during purchasing, but not in the bill of material. These optional components or sub-structures often need to be broken down for the spare parts documents, to make them available as spare parts. The motor requires maintenance to stay in operation, so instructions and maintenance task are gathered from the original documentation and are then broken down into separate tasks for use in digital distribution or content management systems. The information of one component can be connected to a semantic information package. The packaging and proper markup of this information allows for new views to be made into the content and allows for new types of use, troubleshooting and process automation possibilities.

An exemplary solution for this type of system linking would be Etteplan's dynamic content delivery portal HyperSIS, where instruction content is enriched by topic related metadata as illustrated in Figure 5. For example, the spare parts data for the related service component can be directly linked to the maintenance instructions. Other possible additions are safety or skill requirements as well as an estimated time to perform the task. Marking the information into one place as metadata makes the content more valuable and allows for single source publishing, where the same content can be presented in different ways as required by each system or end-user. An example data view could be a collection of each task related to a single system and calculating a total time required to perform all related maintenance tasks. At the same time the system can collect all spare parts, tools and safety requirements for the task and show them as pre-requisites. Another use case could be that spare parts automatically display related replacement instructions.

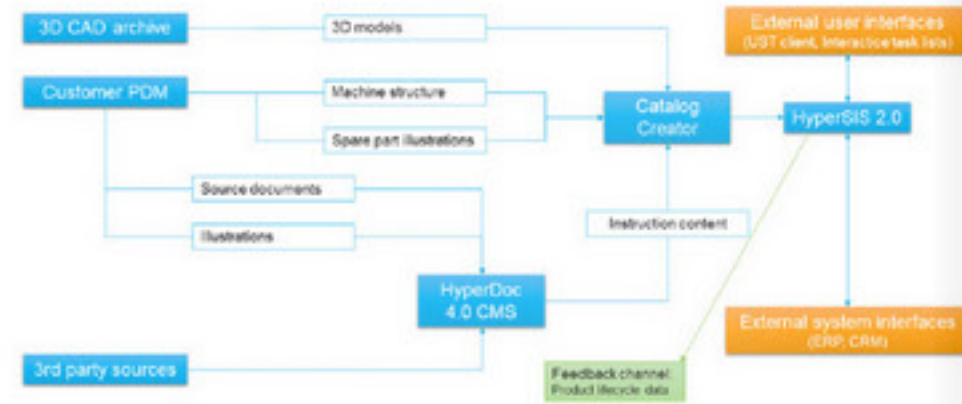Figure 5 Information flow for HyperSIS When the information in technical

Figure 5 Information flow for HyperSIS

documentation is semantic, other information can also be linked to it. For example, the customer information from the CRM system and especially all the life-cycle information can be linked directly to related information.

Figure 6 illustrates simply how the life-cycle information relates and can be linked to product information. Life-cycle information, for example reports from a service visit, contains a lot of information about the machines in the field. The information gathered from the field can be connected to product information, which allows navigation between these two types of information, which come from different sources, just as the internal linking of product information allows lateral navigation.
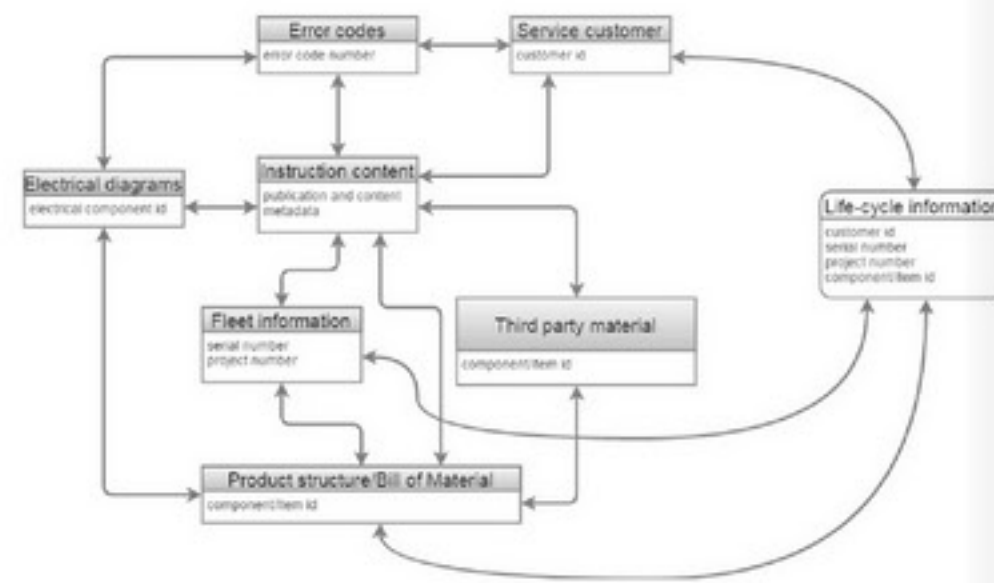

Figure 6 How the life-cycle information relates to the technical data and documentation

Connecting the life-cycle and technical information is the first step in the maturity level 4 in Figure 1 (see previous article). It also enables the crucial value as illustrated in Figure 5. by creating a comprehensive

information model that facilitates the connection of other information systems and data, so that technical documentation becomes future proof at the same time. And by concentrating all product information in one place in a uniform format and up-to-date, quality assurance and development of technical documentation becomes efficient and transparent by allowing direct feedback from the end-users and domain experts.

In practice the life-cycle information can be linked the technical information by creating a relation database between them. The integrating component can be an index with unique IDs and locations for each topic and components that are to be shared externally. In Etteplan's HyperSIS solution the reference index can be updated at the same time as instruction topics are connected to spare parts data, and when the documentation package is published a complete index is made available for external connections. The automatically generated index is then an API for other systems that need to be integrated. Figure 7 illustrates a simplified service process and shows what different data sources are used during a service case.

An information model that integrates a broad range of systems and gathers targeted feedback from the field has the additional benefit of allowing a completely new kind of way of doing technical documentation. As known, documents are made for a complete machine, as smaller entities have not been specified precisely enough to be distinguish uniquely. When the information model specifies smaller components that are addressable from the outside, the documentation can focus on smaller details and work in smaller packages. Small packages allow for the prioritization of content creation and on-demand documentation service that will also work as a basis for larger documentation packages. The enhanced markup allows the documentation organization to serve the service organization directly, by providing documentation for their specific needs, when compared to the broader needs of the product line. What this means is that when documentation and content is made for the needs of the service
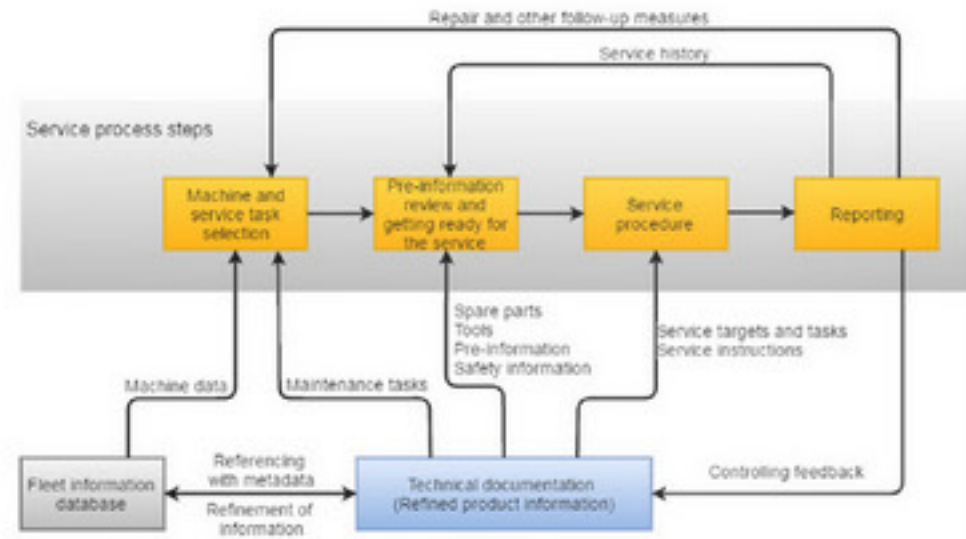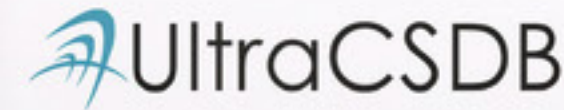

Figure 7 The use of different data sources and technical information during the service process

organization, it also becomes available for all other parts of the organization, which also minimizes the work that is needed to build bigger one-off documentation packages and leaves the documentation organization with more time to focus on development and quality of the documentation.
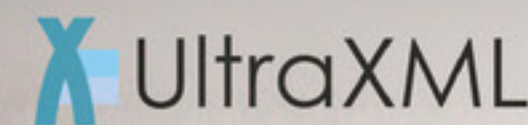
CONCLUSION

The field of technical writing has a lot of possibilities for development. There are numerous structured documentation standards and tools available to use them efficiently in every day technical writing, which can bring or has brought the creation of documentation to a very high level. However, IoT and digitalization are painting a completely new kind of landscape for the future of technical documentation. The content availability needs to be taken to a new level to support the automation of services through single source publishing and machine-readable content. To automate the service business and create new and more value, not only do systems need to be integrated but also information itself. The numerous devices and data needs by end-users also sets the needs for presenting information, as it needs to be distributed in a semantic and structured form.
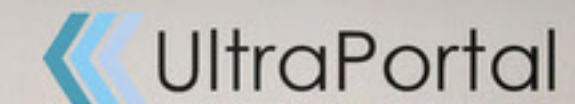
IS YOUR S1000D® *PRODUCTION* FOCUS FALLING SHORT?

INDEPENDENT | AGNOSTIC | A

FLATIRONS JOUVE™

" S1000D® has the power to fundamentally change the way assets are operated and maintained for the better" - JD SILLION - FLATIRONS JOUVE CEO

Mobile technology and new publication paradigms are having a major impact on what can be achieved with product support information, and how it is accessed and consumed by end-users.

For years, technical and product support information has been moving from monolithic SGML, which was nothing more than paper-based information presentation, toward XML (eXtensible Markup Language) based production methodologies. The old ways of producing and deploying monolithic 'traditional' technical publications are rapidly being superseded with modern, innovative and end-user focused methods.

Many of the mainstream technical publication production standards now call for the use of XML, which has meant for our traditional technical information producers and project managers, new skills, new software and new processes must be learned.

The development of open-structured languages like XML enables information to be created, identified, manipulated and employed in ways that traditional technical information deliverables simply could not match. Producing technical information in more modular, interactive and applicable formats delivers the ability to publish and deliver ad-hoc information per task, per user, per platform. But, the power that XML brings to technical information is still largely untapped and often not fully understood. XML has the potential to deliver vast benefits, far beyond traditional deployment methods.

But harnessing this potential requires a shift in the tech pubs paradigm. For much of our discipline's history, the emphasis has been on helping information producers. Understanding how to comply with XML based production rules, standards and specifications have at times superseded making the job of asset maintainers and operators easier and more productive.

CORENA Pinpoint Mobile is OEM-independent, and incorporates 3D technologies

Magnus Nordling - Managing Director, Flatirons Jouve EMEA, serving aviation and defence OEM's in Western & Northern Europe

CORENA Manufacturer

FLATIRONS JOUVE™

CORENA Suite brings cost saving opportunities to your tech pubs programs with timely, high-quality information delivery built atop the aerospace industry's most advanced publishing platform.

Leverage CORENA Manufacturer to support new program requirements and seamless transition into emerging standards for complex asset content.

More timely, accurate, and interactive tech pubs

Mobile, standalone, and web access wherever content is needed

Improved customer product value and after-market service

The increasingly popular S1000D® specification and advances in mobility that complement the spec's capabilities offer the potential for greater end-user focus. S1000D, as practiced to date, has predominantly focused on information production, concerning itself with correct and compliant XML (and SGML for older projects) structures, ensuring that information can be defined, created and shared in a process driven way.

The multi-partner, multi-supplier ecosystem of today's aviation programs is partly to blame for this back-office focus. The complex interchange of suppliers needed to build today's aircraft has resulted in an emphasis on how to produce, integrate and manage information in a coherent and efficient way. Indeed, this is one of those strengths of XML – the ability to integrate and synthesise compliant information using vendor-neutral standards, providing portability within the manufacturer and operator ecosystems.

Neutralising information to remove the bespoke nature of traditional information methods is a back-office imperative, and a necessary enabler of complex new generation aircraft programs that synchronize the work of dozens of manufacturers to achieve a coherent, maintainable product delivery.

The desire to increase efficiency and reduce production costs lies in the perception that technical information is a necessary by-product of the wider platform being supported – not an area of potential innovation in and of itself.

This information is often mandated and delivered hand-in-hand with the larger platform. Traditionally, technical support information (like technical publications) has always been dismissed with a 'get it done in a way that is safe, quick and cheap' attitude, disregarding that the information is to be used by a maintainer or engineer.

But, with the maturation of S1000D that has followed large-scale programs like the

Boeing 787 Dreamliner, the Airbus A350, the Bombardier C Series, and other next-generation aircraft, the time has finally come to consciously shift this emphasis away from the back-office.

IN SHORT, NOW IS THE TIME TO CHANGE THE FOCUS OF S1000D TO THE END-USER.

As an industry, we must understand the compelling end-user benefits that can accompany investment in user experience, ergonomics, and efficiency. Concentrating our efforts on how we enable the end-user has the potential to realize efficiency gains that dwarf the return on investment (ROI) of the production emphasis that has characterized tech pubs to date.

Three Flatirons Jouve customers focused on different disciplines of large asset manufacturing and maintenance, independently performed studies that examined the maintenance productivity impact of having technical information spread across multiple digital and paper systems. Each reached the same conclusion – maintainers in this kind of environment spend 30-40% of their time assembling the information necessary to get the job done. Harmonizing the experience for end-users via a vendor and spec-neutral mobile IETP can cut this time in half, resulting in over 15% productivity savings. Even a small airline's engineering staff or a medium-sized OEM's after-market team can realize these results, translating into millions of dollars in savings.

Using an OEM-independent mobile solution to ensure that technical information, regardless of source, is accessible and usable across multiple platforms, fleets, customers, and maintainers is currently a reality.

Beyond these immediate gains, advances that combine telepresence, simulation, and augmented / virtual reality results in a user-focused strategy that has room to increase ROI in the long-term. The possibilities of materially decreasing maintenance costs today and significantly improving them in the future becomes an achievable reality.

Changing the focus from the already streamlined back-end to the end user will deliver true business competitive advantage, and help change the perception of tech pubs as simply a "cost of doing business".

Contact us at Flatirons Jouve today to learn more about how we are delivering enhanced productivity and product value for our clients, delivering rich, meaningful and usable content.

ABOUT FLATIONS JOUVE

"FLATIRONS JOUVE™ (WWW.FLATIRONSJOUVE.COM) PROVIDES SOLUTIONS AND SERVICES THAT ORGANIZATIONS NEED TO HARNESS THEIR MOST COMPLEX DATA, OPTIMIZE HEIR BUSINESS PROCESSES, AND CREATE COMPELLING DIGITAL EXPERIENCES. A LONGTIME LEADER IN CONTENT-DRIVEN MARKETS LIKE AVIATION AND PUBLISHING. FLATIRONS JOUVE™ ALSO PROVIDES DISRUPTIVE INNOVATIONS TO MEET KNOWLEDGE DELIVERY REQUIREMENTS IN THE MANUFACTURING, BANKING, INSURANCE, EDUCATION AND PUBLIC SECTOR.

FLATIRONS JOUVE™ COUNTS 2,500 EMPLOYEES AND OPERATES WORLDWIDE IN 15 COUNTRIES FROM OFFICES IN NORTH AMERICA, EUROPE, ASIA, AND AFRICA.

WHY USE ASD SIMPLIFIED TECHNICAL ENGLISH ASD-STE100® (STE)?

Ciaran Dodd

IN THIS ARTICLE I HAVE OUTLINED THREE GOOD REASONS (THERE ARE MORE REASONS) FOR WRITING IN STE. TO FIND OUT MORE, EMAIL ME: ciarandodd@outlook.com

In this article Ciaran Dodd, trainer in STE for 16 years, gives three good reasons for writing your technical documentation in STE.

REASON#1 - STE WRITING RULES DESCRIBE GOOD WRITING PRACTICE.

Effective writing in business and technical writing is about communicating information clearly, accurately and concisely. Easy… isn't it? Apparently not. The good news is that there is agreement on how to write effectively.

To keep up-to-date, I read books and articles on writing for both technical and non-technical audiences. Besides delivering training on STE, I also deliver training for non-technical writers, particularly those writing for the public. The principles I use for non-technical audiences are similar to those used in STE, so I know first-hand that these principles work for everyone. And, the principles recommended in the books that I read are like the writing rules of the STE specification. For example:

1. Use words that are familiar to your audience and explain any technical or unusual terms.

2. Avoid long noun strings (three or four nouns which modify the main noun, such as road accident research centre).

3. Use verbs instead of making them in to nouns (writing 'We decided' instead of 'We made a decision').

4. Use the active voice instead of the passive voice ('A hit B' not 'B was hit by A').

5. Keep your sentences short and express one idea in a sentence.

STE goes further than most guides on writing by specifying the standard you must write to. For example, the specification requires sentences of 20 words for procedural writing and 25 for descriptive writing. It specifies the active voice only for procedural writing and very limited use of the passive voice for descriptive writing, but it prefers the active voice. STE restricts writers to certain verb forms and to a maximum of three nouns in a noun string or cluster. STE also restricts the types of words than you can use. The permitted words are described in the rules and in the dictionary of approved vocabulary. It is this last aspect of STE that may be more difficult to apply in practice. The rest of the writing rules, in my opinion, simply describe what is good practice for effective writing.
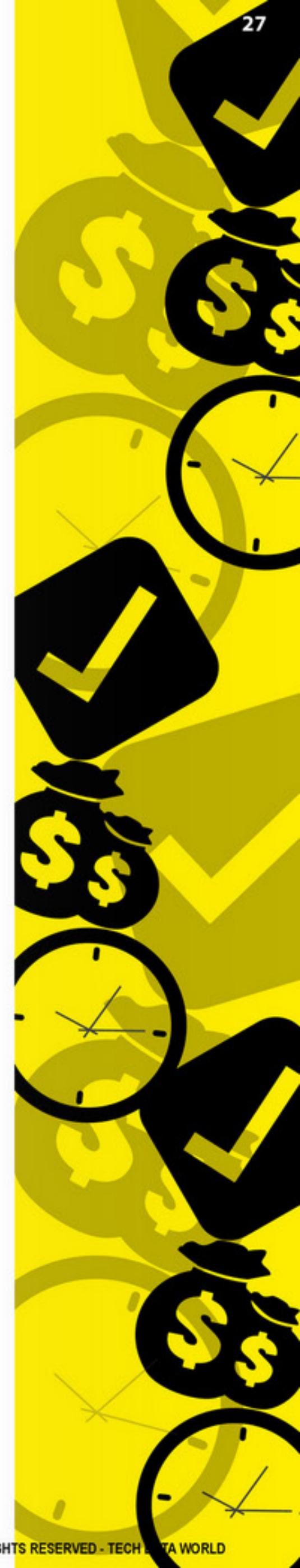
REASON#2 - STE ADDS STRUCTURE TO YOUR CONTENT

When I started delivering training in STE in 2002, STE was known as AECMA Simplified English. My main customers were in the aerospace and defence industries where companies were required to use Simplified English for regulatory or contractual reasons. AECMA developed Simplified English as early as 1986 because the aerospace industry recognised how important it was "to make texts easy to read and understand." (1-4-1, ASD-STE100, Issue 7, 2017).

Since 2002, technology has changed the way that companies produce technical documents and use technical content beyond all recognition. One of the main developments is the use of XML to separate content from form and to facilitate better structure and reuse of content. One standard that is used for creating structured documents is ASD S1000D, developed originally for the aerospace and defence industries. S1000D specifies the use of STE and shows that structured authoring and STE complement each other.

Content is built with modules that are carefully structured. But what about the structure of the content within each module? The content within the modules also needs to be structured and controlled to improve the quality of the content and any translations of the content. This is where STE will benefit your writing. For example:

1. STE permits six verb forms. (The -ing form of the verb is not one of the permitted verb forms!) Verbs (actions) are the heart of an English sentence and we have many verb forms that allow us to express precisely when things happen and for how long. Many verb forms are complex to write correctly and to understand, so STE takes away this complexity and gives you what you need to write technical content precisely. The challenge for the writer is to structure content carefully to comply with these rules.

2. For procedural writing there is only one permitted form – the imperative or command form. In STE, you begin each instruction with a verb written in the command form, much like in a recipe: mix, add, pour. This gives procedures clarity and consistency, particularly when the meanings of the verbs are defined in the STE dictionary.

3. Descriptive writing is much harder to write than procedural writing because you are usually explaining how equipment looks and how it works. Here STE gives some of the best guidance I have seen on structuring paragraphs and sentences to help the reader. STE describes how using key words in each sentence or paragraph can show your reader the logic of what you are explaining. There is even a worked

example to show you.

These rules, along with the principles that I mentioned in the previous section, are key to structuring your paragraphs and sentences tightly. This improves the quality of what goes into the structured modules and ultimately helps the reader to find the information that they need quickly and make sense of it easily. If your readers can do that every time they read your content, then you are succeeding. That, for me, is another good reason to use STE.

REASON#3 - STE BENEFITS TRANSLATION

If your organisation translates its documentation, I've no doubt that your three main concerns are managing:

- quality
- time
- cost

Whether your translation needs are small (one document into one language) or large (several documents with several updates into many languages), you need to manage these three factors. How can STE help you?

QUALITY – a translator, no matter how skilled, can only work with the source material. In other words, what you put in is what you get out. It is crucial that the source material is skilfully written, specifically for translation. For example, if you use a complex verb tense that is not used in the target language, then the translated text may have a slightly different meaning to the one that the author intended. STE has rules on grammatical structure. In this situation, it restricts the verb tenses that an author can use. In this way, you reduce the ambiguity in the source text and the likelihood of confusion in the translated text.

TIME – translating new material is very time-consuming. Many translators work with translation memory (TM) tools. A TM is a bank of words and sentences with the translated equivalents. If a piece of text has been translated before, the TM will assess how closely the text matches. If there is a 100% match, the TM simply inserts the translated text. If there is a fuzzy match, the translated text is amended by the translator. If there is no match, the translator will have to create a new translation. The more you can reuse text, the less time you spend re-translating text. Writing to the principles of STE will help because it imposes a discipline on the language that you use, requiring oneword to have one meaning and restricting your choice of words.

COST – in most cases, you will pay for the translation of new material. Imagine that you need to translate a revised manual. Ninety percent of the manual is exactly the same. If you have written your source document carefully and consistently, then you will only pay for the genuinely new text. If, however, you've used slightly different names for a component for example, you will pay for the translation of these variations and incur unnecessary cost. Once more, STE helps by requiring you to be consistent in your use of language.

So, if you are translating technical content and you don't use STE, perhaps you have a case for using it.

"SWINGING THE LAMP..."
SUPPORT ENGINEERING – CAN WE FIGHT HURT?

PETER STUTTARD

There is a clue in the title and sub title above as to the nature of this piece.

I am going to "Swing the lamp" a little, and that, as any ex-service person knows, is when you, hopefully, tell an entertaining story, which provides you with an opportunity to reminisce and maybe to boast a little.

A General of the US Marine Corp was emphasising the need, the critical need, for our Armed Forces to be able to operate effectively, to be able to complete their mission, despite taking casualties, when Lines of Communication were constrained or cut, when operating in very hostile, austere environments. The General defined this as the ability to "fight hurt".

Recently, I have had several conversations with a number of, let's call them "people in the sector" (I will refer to my anonymous protagonists as PITS). One, typical, conversation revolved around about the ability of a platform to be operated and maintained once it had been the target of an attack by chemical or biological agents. (This was prior to the incident in Salisbury, which has focused attention on this topic). The response from PITS was essentially, we don't need to worry about that because "They will just batten down the hatches and get out of the way…". Now I, and any thinking person I hope, understands that that simply is not the case. Units in the Royal Navy, the Army and the RAF do not simply run away when they are attacked. They have a job to do, if there is a mission to be accomplished, they stay put, they get on with the job, and they accept that this may mean taking casualties.

So what has this got to do with support?

Well, our Service people, our suppliers and engineers etc, have to operate under such conditions, they have to maintain platforms, to repair equipment that, due to severe operating conditions or enemy action, has been damaged as well as equipment that has failed. When talking with a senior Army Engineer I referred to Failure Modes and Effects and Criticality Analysis [FMECA]; his immediate response was, 'failure isn't the

main problem, it's damage; to illustrate, we need wheel station replacement kits in response to IED damage…". A series of questions immediately spring to mind when you consider this simple statement, why are support engineers not addressing this and similar issues as a matter of course? Why does virtually no one conduct Damage Modes and Effects Analysis [DMEA]? Why isn't Battle Damage Repair [BDR] given much more prominence when training our military technicians, should we not be giving our technicians every opportunity to hone their skills so that they can maintain systems in the field, when there may be no recourse to contractor support?

Another conversation with PITS revolved around platform survivability, now the ability to survive is rather important, but just surviving is not enough, the platform and its operators must complete the mission. Hence the 'capability' must be sustained, if damage occurs, the operational capability must be restored. When I raised this issue in conversation, I asked "do you train

your people to repair damaged systems, do you carry the materials and the tools necessary to effect such repairs, if, say, the enemy rakes your systems with a .5 calibre machine gun, or if the equipment is hit by a Rocket Propelled Grenade [RPG] (minor weapons note). The response was from one contender was "no" rather they relied on the redundancy that was built in to the platform. Which is OK provided that there is sufficient redundancy in place, and the backup systems don't fail, and if you don't have another 4 or 5 such missions to conduct in short order; which in a future conflict may well be the case.

But this PITS mindset, the tendency to disregard potential "combat conditions" and to assume that the enemy we will be facing will be something akin to those asymmetric threats we have faced in recent years, is one that is all too common. (I have been told, that the failure of the powerpack in a main battle tank wasn't particularly important, because it was unlikely that the tanks would ever be engaged in combat). The consideration that

in a future conflict we may be facing a nation state, rather than insurgents, is all too often filed under "Too Difficult".

So again, what has this to do with support?

To state the obvious, during the development phase of new platforms and equipment we need to be considering "Battle Damage Repairability", we should consider what training, supply support, technical publications, support and test equipment, what organisational constructs, etc are required in order to facilitate the support and maintenance of our system, under combat conditions.

A little swing of the lamp…

When I was trained as an aircraft technician in the REME in the late 1970's, Battle Damage Repair was an important aspect of everyone's training. We were shown how to repair a flight control rod using a length of broom handle and some fibre glass resin. The equivalent would much more difficult, if not impossible, today. In part this is because systems are more complex, but also I suspect, because our military technicians are not given the freedom that we enjoyed all those years ago. We also have to consider the nature of modern materials, for example, composite materials are difficult to repair in any circumstances, never mind on the back of a frigate, or in a muddy, wet and cold clearing in a forest.

There is also, quite rightly, a much greater emphasis on system safety today, but we have to approach the problem in the right way, the first question should not be 'should we do this, it will affect system safety? But rather, "do we need to do this? If we accept the need then we can go on the address the question "how are we going to make this possible, what changes do we need to make?

I am an enthusiastic advocate of the use of new technology, in particular in the field of support engineering, but we need to consider practicalities, any technology has to be appropriate to the operational environment. Can it be maintained and

sustained, patched and repaired on an open deck in the South Atlantic, can it be done at minus 15 or plus 40 degrees centigrade, do our service people have the skills and the freedom to use them, that will enable such repairs to be carried out?

A bigger swing of that lamp… and a discussion about boots…

Many years ago, I was a member of a joint services expedition to the Antarctic. We over wintered in tents, we believe that we were the first expedition to do so, at least the first to so intentionally. During our sojourn we were very isolated, we had to be completely self-sufficient.

We had, for the time (this was in 1984) some pretty advanced kit, but this was mixed in with some traditional and some pretty basic equipment as well, and for that we were to be very grateful. We moved around on mountaineering skis, our boots were fancy plastic affairs with separate inners, a cross between a mountaineering boot and a ski boot. They cost £400 a pair if I remember rightly, (this was 1984 so that was serious money), but they were so unbelievably uncomfortable that our expedition leader (an RN Engineering Officer) once skied all day with an aluminium lens hood in between his inner and out boots and was so used to the discomfort, that he didn't realise it was there until he took his boots off. The feet of one of our team were so badly damaged by these horrors that we had to abandon him (we left him with a tent and a companion), and ski back to base camp, dig a road up the face of a glacier so we could get our skidoos out and onto the mountain, and mount a rescue.

This is not an ideal situation, so what did we do, what could we do? Well, we did have leather "Dolomite" (Dollies) walking boots, so with a bit of spare leather (we had a sheet of leather that we 'proffed' whilst in the Falklands) and a bit of steel cut from an empty 45 Gallon fuel drum, we modified the Dollies so that they could be used as ski boots, (mine are still in my attic), and added insulating gaiters made out of modified military over-boots. To use another US

Marine Corp term, we "adapted, innovated and overcame" the problem. We had a number of similar experiences; we found that expensive Gore-Tex clothing ceased to be effective after 2-3 months of daily use, being rubbed by a heavy back pack, with constant contact with a climbing harness rendered it useless (we travelled roped together because the terrain was heavily crevassed). However, Ventile, which is simply a very high quality cotton, performed much better, it is tough, it works even after harsh treatment, even when patched. Similarly a bivvie bag made out of Tyvek paper out performed the GoreTex versions. The crude lightweight jackets we made out of parachute nylon outperformed much more expensive kit, they were windproof and driving snow didn't stick to them.

We found that wood tends to fail gracefully and is readily repaired whilst plastic doesn't and isn't. We resorted to many other "old fashioned" technical solutions to the myriad of little problems that arose on a regular basis and I could bore you for hours with these examples. By the end of the expedition, we looked like a bunch of scarecrows that not even our mothers could have loved, but our rag tag kit worked extremely well.

You may ask, why on earth did we take old parachutes and sheets of leather with us on an Antarctic expedition? The answer, I believe, lies in the nature of the people on the expedition, drawn from all three services (plus a couple of tame civilians) they were practical, independent people. The sort of people who see a sheet of leather or a parachute and think, "that could be useful" and so "acquire" it, just in case. This practical mindset became very apparent on many occasions, Ted repaired the damage axles of our skidoos with a hand cranked lathe lashed up out of odds and sods, he beat sledges out of empty 45 Gallon fuel drums, when we discovered that the 3 and 4 metre sledges we inherited from Ranulph Fine's Transglobe Expedition were too unwieldy for the mountainous terrain we had to negotiate (we stuck them on end and used them as route markers eventually, if you want one, I can give you the Lat and Long).

This mindset, this approach, also manifested itself when we made Midwinter's day presents for each other. Members of the team created some astonishing gifts, including a ship in a bottle and a leather bound, karabiner handled, mug made out of an empty Pusser's Rum bottle, complete with an engraving of our expedition logo. These things were achieved whilst working in tents, or in our workshop made out of MFO boxes and Pussers Planks (packing crates and wooden cross country skis to the uninitiated) there was no power, only basic tools were available, and the average temperature was around minus 10 degrees.

I'll now stop swinging the lamp now, but what has this to do with ILS, with support engineering?

The point of this little reminiscence is that it demonstrates that with the right people, with the right experience, with the right materials, it is possible to sustain kit and in the most austere conditions. Now I am not suggesting that we resort to building modern military systems out of wood and leather. What we need to do is to give more thought to how "repairable" our systems are, to what materials they are made of, to how they can be sustained with only the resources to hand, when spares are scarce or not to be found.

We should conduct DMEA as a matter of course on all combat equipment, it is after all completely irrational not to; we should consider robustness and durability as well as reliability. We should forget about the warm, dry, well lit, well supplied, well supported conditions that prevail in peacetime and consider, really consider, how modern weapon systems will be supported and maintained in the most severe combat and environmental conditions, when the Main Operating Base [MOB] is distant, if it exists at all.

We should consider how to equip our technicians, determine what tools and materials they need; what is the modern equivalent of my clasp knife and marlinespike, the sheet of leather and the parachute?

We should consider how we train and develop our technicians so that they are better equipped to adapt, innovate and overcome.

ALL ABOUT BUSINESS RULES
PART FIVE:
INTRODUCING THE BUSINESS RULES DOCUMENTATION (BRDOC)

DR MIKE DAY

BACKGROUND

Issue 4.2 of S1000D has taken business rules to a new level. A lot of work has been done in standardising the business rules documents that are produced for a project. There is a new Schema and Specification Chapters to support the new concept of business rules document data modules called **BRDOC**. In this article, I introduce it and further sections will provide guidance how to create a **BRDOC**.

So where does BRDOC come in? Well, let's answer that by describing what BRDOC is. S1000D in Chapter 4.10.1 describes it as a data module that *"provides a means to create and manage the business rules developed by a project"*. In fact it's more than that. The original change proposal requirement was for a way of standardising the way **Style Guides** are written and used so that authors training in S1000D could move seamlessly between projects and know how to use its documentation and also to support the development of BREX data modules.

You can indeed use BRDOC to create style guides, and it can do that as it's based on the descriptive schema. However, **the S1000D business rules working group** designed a Schema that can also be used for creating business rules to detail contract business rules requirements. While not an S1000D term yet, I call those types of documents as **BRINDEX** in this article.

As we will see, what we now have is a Schema that is very good at creating lists of decisions to be made and the decisions that were actually made against each Business Rules Decision Point (BRDP) in the specification;

in this form it is very good at supporting the development of the **Business Rules Exchange Data Module** (BREX).

Can it be used for the creation of guidance for authors and illustrators? The answer is "yes" as it is based on the descriptive schema. There are, however, few features in the Schema that provides for the creation of Style Guides above what you already have in the descriptive Schema – but it is in this area that the BRDOC needs to be developed further, and I would encourage its use for Style Guides as the richness we need will come in future updates.

When used as a contractual list of rules, the BRDOC structure is highly likely to follow the order of the decisions needed to be made by S1000D's BRDPs although Victoria Ichizli-Bartels provides a much more natural order in her **S1000D Untangled book**, and S1000D's Chapter 2.5.1 describes a rough sequence in which BRs need to be developed together with a "process" in Para 2.5.2 of Chapter 2.5.2. The reader should note though that this process cannot and should not be solely the responsibility of the Technical Publications team as all disciplines need to be involved.

So, as BRDOC is very strong at creating business rules for BRINDEX, we will start by looking at these features. We will then look at how we can use BRDOC for a Style Guide.

Note that in this article I have used CAGE codes that may exist in real life. However, no link to real organisations is intended as these are just examples to demonstrate mark up and layout.

How to create a Business Rules Document for a BRINDEX type document

WHAT IS A BR INDEX?

As we said above, while not yet an official S1000D term, the BR index (BRINDEX) is a name given to the output of the **business rules creation process**. The BR Index

provides a method of mapping the business rules decision points in the specification or the higher level business rules documents to the decisions that have been made, by whom and when during the **definition process**. The output of such a process (the BR Index) is a long list of the decisions made and typically in one document. The BRDOC schema is well equipped with the elements and attributes that are needed in this process.

The process will involve studying the business rules decision points incorporated in the specification and creating business rules decision points and decisions in a BRDOC. This comes complete with what needs to be selected, the values to be selected, who is assigned the job of selecting them and after selected, the BRDOC records the decisions made.

As you will see, the structure of the BRINDEX is probably best held in a database or a spreadsheet (indeed S1000D will provide a sample spreadsheet called the BRTEMPLATE). The goal of the BRDOC when used as a BRINDEX is to allow them to be exchanged in a neutral standards-based format.

THE STRUCTURE OF A BRDOC FOR A BR INDEX

THE LEVELLED PARAGRAPHS

The BRDOC structure allows you to put numbered paragraphs and subparagraphs just as you would in a descriptive data module – using element **brLevelledPara**. Within the numbered paragraphs, there are two new elements called the **business rules decision (brDecision)** and the **business rules paragraph (brPara)** which allow you to record information about business rules.

The basic structure of a BRINDEX is a set of decisions that have been made or have yet to be made using the **brDecision** structure, and a set of business rules decision points using the **brPara** structure. These are described next.
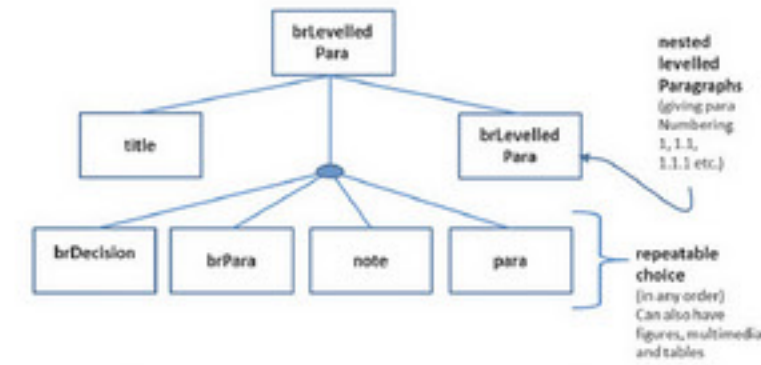

FIGURE 1 - THE STRUCTURE OF A brLEVELLEDPARA

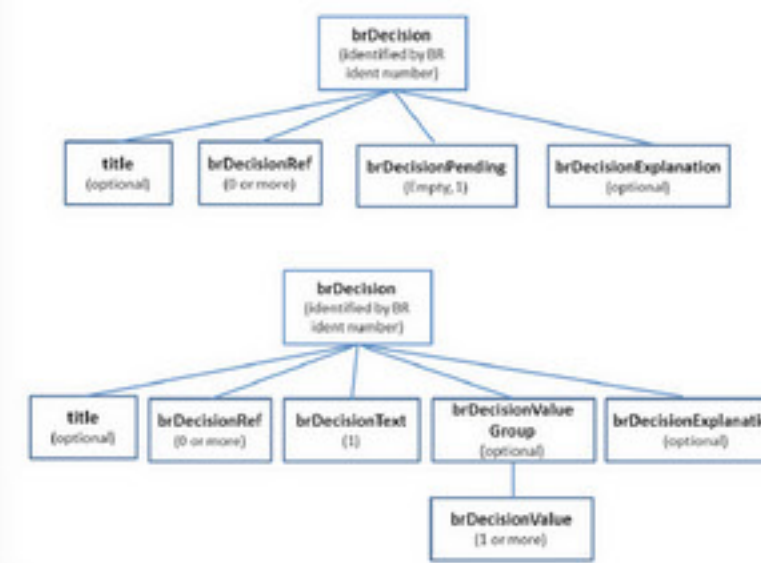## BUSINESS RULE DECISIONS – ELEMENT BRDECISION

FIGURE 2 - THE TWO STRUCTURES OF A brDECISION ELEMENT

The **brDecision** element appears directly under the **brLevelledPara** element and also under the **brPara** element which is also under the **brLevelledPara** element. It is uniquely identified by the BR decision Identification Number (attribute **brDecisionIdentNumber**).

brDecision can then follow one of two patterns – first when no decision has yet been made, there will be a **brDecisionPending** element and nothing else except maybe references to other decisions in this data module or another (**brDecisionRef**) and maybe an explanation has been provided (using **brDecisionExplanation**) – see top diagram above.

When a decision has been made it will be recorded in a **brDecisionText** element,

and if the decision has multiple values associated with it (for example, a list of options), then these are recorded under the **brDecisionValueGroup** element – see bottom diagram above. The figure that follows shows the state of a decision on the list of allowed CAGE codes before it has been made and afterwards.

FIGURE 3 - AN EXAMPLE OF A PENDING BR DECISION (YET TO BE MADE)

FIGURE 4 - A COMPLETED BR DECISION

Each **brDecision** has a flag that indicates if the derived rule will appear in the Business Rules Exchange data module (BREX) – called **brexRuleFlag** which if set to the value "1", the text found in the element **brDecisionText** must appear in the BREX's element **objectUse**. The purpose of this is to provide a means of automatically creating and quality checking the BREX that result from the BRDOC.

An attribute on the **brDecision** element called **brSeverity** (optional) indicates the severity indicates the severity if the rule is broken taking the values "**brsl01**" thru "**brsl03**" with "**brsl01**" being the most severe (and, if broken, you should not allow the data module to enter the CSDB).
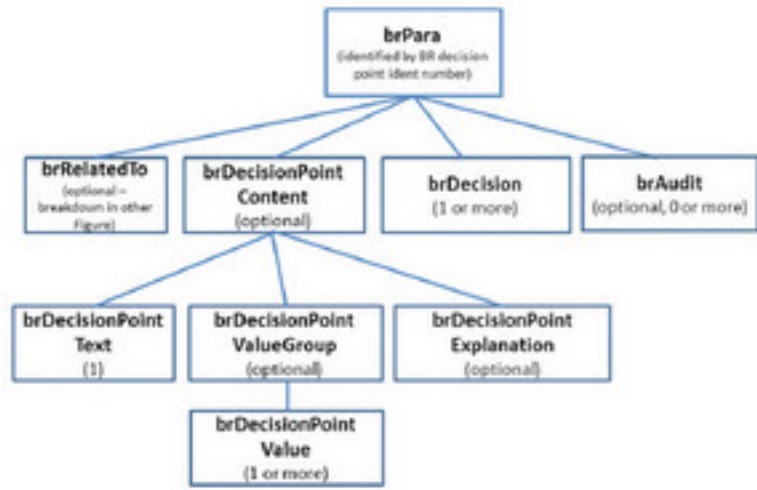
BUSINESS RULE PARAGRAPHS – ELEMENT BRPARA

FIGURE 5 - THE STRUCTURE OF BRPARA

IDENTIFYING BUSINESS RULES DECISION POINTS

Each **brPara** has a mandatory attribute called **brDecisionPointUniqueIdent** in which you must record a unique ID of the business rule decision point. This is not an ID reference, so you can record any string you want here – however if your business rules decisions are directly from S1000D's BRDP you should record the BRDP number and if your decisions are from a project BRDOC, then record the project's BRDP number here – in doing this it will provide an audit trail and a method of hyperlinking from your business rules documents to the higher level ones and ultimately back to S1000D itself. You can use the **brRelatedTo** element to record the data module code of the higher level data module, or you can use it to record a non-S1000D document or a publication module.

ASSIGNING A BUSINESS RULE DECISION PRIORITY

The **brPara** element has the attribute **brDecisionPointPriority** that can be used by projects to show the order in which the business rules decisions need to be made when you are constructing a set. There are five priorities allowed **brpr01** (highest) thru **brpr05** (lowest).

PROVIDING LINKS TO OTHER BUSINESS RULES DECISIONS AND DECISION POINTS
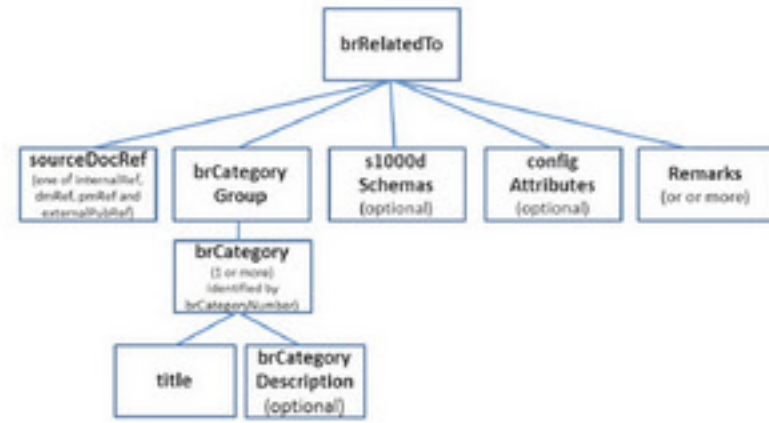

FIGURE 6 - THE STRUCTURE OF BRRELATEDTO

Business rules decision points and rules are related to other decision points and rules – for example if the answer to one decision is "do not use this optional method in S1000D", then any related child rules are also not used by implication. The element brRelatedTo which as we have seen allows you to point to where the business rule decision came from using the element sourceDocRef is also used here. The structure of the brRelatedTo element is shown above and an example XML fragment showing a link to S1000D is shown below.

FIGURE 7 - EXAMPLE MARK UP OF A BRRELATEDTO

IDENTIFYING BUSINESS RULES CATEGORIES THAT ARE APPLICABLE TO A BUSINESS RULE

S1000D Chapter 2.5.1 provides a method of grouping business rules by their categories (see Figure 8). You can define which category the business rule or decision point relates to by using the **brCategoryGroup** element. This has a title and an optional description of the category. The figure below shows the categories from S1000D which you can follow or define your own.

FIGURE 8 - THE S1000D BUSINESS RULE CATEGORIES

FIGURE 9 - A DEFINED BUSINESS RULES CATEGORY

IDENTIFYING WHICH SCHEMAS ARE APPLICABLE TO A BUSINESS RULE OR DECISION

You can specify what S1000D schemas that the business rule or decision is applicable to using the element **s1000dSchemas**. This provides a list of yes / no responses to indicate if the rule is applicable or not to a given data module type. For example, if the rule is applicable to the descriptive schema and the procedural schema but no others, then the attributes **procedXsd** and **descriptXsd** will be set to the value "**1**" indicating "**yes**". All others will be set to "**0**" indicating "**no**" or the attribute won't be there (as the default value is "**0**").

FIGURE 10 - DEFINING WHICH CONFIGURABLE ATTRIBUTES AND SCHEMAS ARE RELATED TO THE DECISION

IDENTIFYING APPLICABLE CONFIGURABLE ATTRIBUTES THAT ARE APPLICABLE TO THE BUSINESS RULE

The **brRelatedTo** element allows you to record any configurable attributes that are applicable to a rule using the element **configAttributes**. In S1000D, there are attribute values that can be configured using mnemonics. Some are predefined by the specification and some can be defined by the project, for example the level of maintenance is define by S1000D for the values "**ml01**" thru "**ml05**" as maintenance levels 1 to 5 and a project can define their own definitions of maintenance levels using "**ml51**" thru "**ml99**". If the maintenance level configurable attribute is involved in this decision then the attribute **maintLevelCodeAttRelation** is set to the value "**1**".

THE BUSINESS RULE DECISION POINT ITSELF

FIGURE 11 - A RECAP OF THE BRPARA STRUCTURE

After **brRelatedTo** in **brPara** comes the element **brDecisionPointContent** which contains the text of the business rule decision point using a title and the element **brDecisionPointText** (which contains elements of a paragraph). If the BRDOC is one level lower that S1000D, the text will contain the words of the BRDP referenced in S1000D, if it is two levels down, it will contain the text of the higher level BRDP.

```
<brDecisionPointContent>
<title>Common information</title>
<brDecisionPointText>Decide if you want to use the element &lt;commonInfo&gt;.
When to use the element, and give guidance and rules that
will make sure that it is consistently used.</brDecisionPointText>
</brDecisionPointContent>
<brDecision>
<brDecisionPending/>
</brDecision>
```

FIGURE 12 - THE brDecisionPointContent ELEMENT

Also within **brDecisionPointContent** are also the optional **brDecisionPointValueGroup** and **brDecisionPointExplanation** elements. The **brDecisionPointValueGroup** and **brDecisionPointValue** elements are similar to the **brDecisionGroup** and **brDecisionValue** elements we saw in our discussion on **brDecision** above, except that they define the superset of values you can choose from and the **brDecisionValueSelection** attribute is set to multiple or single depending if you can select one or more than one value. The **brDecisonPointExplanation** will provide the guiding text.

```
<brDecisionPointContent>
<title>Responsible partner company</title>
<brDecisionPointText>Decide which NCAGE codes apply to the sub-frame and
airframe manufacturers and the relationship with the
suppliers defined in originator.</brDecisionPointText>
<brDecisionPointValueGroup brDecisionPointValueSelection="multiple">
<brDecisionPointValue brDecisionPointValueAllowed="K0378"/>
<brDecisionPointValue brDecisionPointValueAllowed="A3460"/>
<brDecisionPointValue brDecisionPointValueAllowed="8338B"/>
<brDecisionPointValue brDecisionPointValueAllowed="D3309"/>
<brDecisionPointValue brDecisionPointValueAllowed="P2345"/>
<brDecisionPointValue brDecisionPointValueAllowed="K0921"/>
<brDecisionPointValue brDecisionPointValueAllowed="8234H"/>
<brDecisionPointValue brDecisionPointValueAllowed="A9834"/>
</brDecisionPointValueGroup>
<brDecisionPointExplanation><para>Choose the set of NCAGE codes that are applicable
to your sub-project.</para></brDecisionPointExplanation>
</brDecisionPointContent>
```
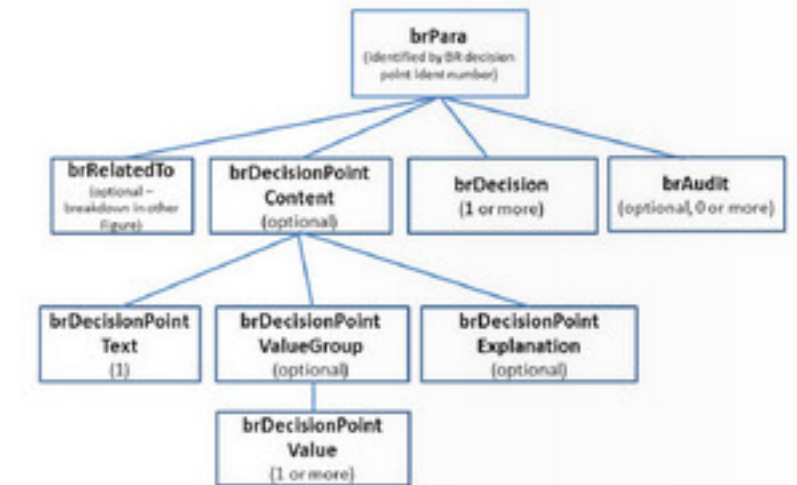
FIGURE 13 – brDecisionPointContent

CREATING AN AUDIT TRAIL AND ASSIGNING ACTIONS

```
<brDecisionExplanation>
<para>K0378 represents data modules that are the repsonsibility of ACME.</para>
<para>A3460 represents data modules that are the repsonsibility of HSLE.</para>
<para>8338b represents data modules that are the repsonsibility of JKLM.</para>
<para>D3309 represents data modules that are the repsonsibility of PMTA.</para>
</brDecisionExplanation>
</brDecision>
<brAudit>
<brDecisionRef brDecisionIdentNumber="K0378-00125"/>
<brAction brActionOwner="K0378 - Joe Soap" brActionCompleted="1">
<para>Clarify whether all partners in the project agree to the list
of selected NCAGE codes for responsible partner company.</para>
</brAction>
<brCurrentStatus brStatus="brst01">
<responsiblePartnerCompany enterpriseCode="K0378"/>
<brRequiredDate year="2018" month="03" day="28"/>
<brStatusDate year="2019" month="01" day="12"/>
</brCurrentStatus>
</brAudit>
```

FIGURE 14 – THE brAudit ELEMENT

Finally, under **brPara,** you can include a **brAudit** element to record the audit status on a BRDP. This includes business rules decisions that have been made and any actions that are needed to complete it. The **brAudit** includes zero or more business decision reference (**brDecisionRef**) which provides a reference any other business rules defined by this decision (if any). If there is no **brDecisionRef**, then the audit is for the current BRDP (the one in the **brDecisionIdentNumber** attribute on the brAudit element). If the brDecisionRef applies to a rule in another BRDOC it will contain a **refs** element inside it.

Any actions that are required to complete the decision are recorded under BR action (element **brAction**). The actions are intended to describe the effort needed to complete the decision and contains information about the action owner (mandatory attribute **brActionOwner**) and if the action is open or closed (using attribute **brActionCompleted**).

The element **brCurrentStatus** is used to indicate the current status of the BR decision. It contains **brDecisionRef** elements as previously described, multiple (0 or more) **responsiblePartnerCompany** elements containing the CAGE codes of the organisations responsible for the decision, multiple (0 or more) **Originators**, an optional required date (using element **brRequiredDate**) indicating when the decision must be finalised, and a status date (using element **brStatusDate**) indicating when this status was recorded.

MARK UP EXAMPLE

Mark up example

```
<responsiblePartnerCompany enterpriseCode="K0378"/>
```

FIGURE 15 - A MARK UP EXAMPLE FOR THE BUSINESS RULE DECISION

FIGURE 16 - HOW TO MARK UP MARKUP EXAMPLES

USING THE BRDOC TO CREATE A STYLE GUIDE

Compare what we have just seen for BRINDEX to a Style Guide. A Style Guide is typically a true set of data modules with full **guidance** for the authors and illustrators involved in the project and it is laid out in nice neat paragraphs with mark up examples, lots of description and graphics showing layout examples.

BRDOC can be used for Style Guides – and some will try to use the **brPara** and **brDecision** elements as we saw above to do this. I believe the best structure to create the Style Guides and **interface documents** that we are used to is by using descriptive paragraphs – for example the **brLevelledPara** and not to use **brPara** and **brDecision** at all.

In the example that follows I accept that this can be marked up using a brPara, however I argue that the Style Guides will have far more descriptive structures that this in reality. I use this to show how the brLevelledPara could be used.

2.1.2   Responsible Partner Company

For sub-frame data modules the element <responsiblePartnerCompany> must contain one of the values below:

K0378 – ACME frames ltd
A3460 – HSLE subparts inc
8338B – JKLM astroframes
D3309 – PMTA FrameMakers plc

Do not use the child element <enterpriseName> as the name of the organisation is added when the data module is formatted to avoid having to update data modules if a partner changes its trading name.

2.1.2.1   Mark up example

<responsiblePartnerCompany enterpriseCode="K0378"/>

2.1.2.2   Layout example

Responsible Partner Company: K0378 – ACME frames ltd

FIGURE 17 - AN EXAMPLE STYLE GUIDE EXCERPT

FIGURE 18 - HOW THE STYLE GUIDE COULD BE MARKED UP

A Style Guide then should be able to provide mark up examples and, layout examples where they are appropriate and the BRDOC **example** element would be very useful to do this. However, probably by oversight, it is not available directly in a **brLevelledPara**. This isn't really an issue because we can do the same by using a **brLevelledPara** with the title set to "**mark up example**" and then using the **verbatimText** element as shown above.

FINAL WORDS

In this article we have seen how a BRDOC can be used to create a **BRINDEX** (my term) and a set of Style Guide data modules. Note that there are many ways of marking up the same thing and as yet S1000D guidance is immature but improving and the BRDOC schema will develop in time as it is used more. I hope that this article will provide you with a good start in developing your own BRDOCs.

This is the last article in this set, and we have looked at the whole concept of business rules in S1000D from a very high level in articles 1 to 3 to a very detailed level when we discussed how to create a BREX in article 4 and a BRDOC in this article.

I hope that this set of articles have proved useful for you as you endeavour to create your own business rules for your real project.

Good Luck as you progress!

Tech Data World

NEXT ISSUE "PERSPECTIVES"

OPINION AND COMMENT

Any opinion and comment within this publications is strictly that of the author and not necessarily the opinion of Technical Documentation World Limited.

ASK MIKE

Mike Ingledew has been supporting organisations achieve tech data success for over 20 years - here he answers some questions that came in to us at TDW.

Should we be using the S1000D Process Module?

The S1000D Process Module is a VERY powerful capability and can really help drive up end-user efficiency - the aim is to take the user to a piece of information that is appropriate to a given situation - the very basic example that is given by the S1000D community, is that of inflating a bike tyre. If the tyre is low on pressure, it takes the maintainer to the inflation procedure, if the tyre is over inflated, then it takes you to a replacement procedure.

The biggest challenge around the Process Module is having authors understand the almost programming language needed to create successful Process Modules, couple that with not all S1000D vendors actually support the Process Module.

Used correctly the S1000D Process Module can deliver MANY benefits, but you need to be sure your team is able to cope with the creation of these complex modules as well as having software that supports it.

Will you be attending the S1000D User Forum in the USA?

At this time, no, I attended both the user forum in Spain and the forum in Amsterdam, for me these were almost carbon copy events and despite meeting some great old friends and customers, I could have attended Amsterdam only and dropped Seville completely - but then I would have missed the great reception evening.

That being said, if there is a demand for me to be there from TDW customers, then I will book my ticket and head on over to the sunny states. I have not been to the US for a few years and am always happy to head over that side of the pond.

If there is a REALLY (and I mean REALLY) interesting agenda, then I will come, but if it is the same old stuff from the same old people, then I will not be travelling to the S1000D User Forum this year and wait for London 2019!

ARE YOU GOING TO THE S1000D USER FORUM? WHAT DO YOU HOPE TO LEARN? LET US KNOW!

SEARCH: MICHAEL INGLEDEW TDW

Where is the next generation of author coming from?

This is a fantastic question and one that comes up frequently at most of my meetings, in fact in the last TDW magazine I wrote an article on this as well as recording a vLog for our YouTube channel.

Here's the real issue, the supply chain (no pun intended) of engineers entering the technical information market, has been and continues to dry up at pace. This is one of the reasons we started TDW, we could see years ago that there would be a skills crises in information market and we wanted to liven up and encourage fresh the technical and new skills into this trade.

Many organisation themselves have identified this as a core business issue and with many ageing teams rapidly approaching retirement this will only get worse. This is why there is a slow trend toward outsourcing of technical information production - not ideal, but may departments are now making it 'someone else's problem'.

A week does not go by that we do not receive a request here at TDW asking if we know if any good people are available - and this will only get worse - that is why it is down to organisations like TDW to encourage new and fresh people in to our critical discipline.

IN Q1 THIS YEAR WE INTRODUCED THURSDAY THOUGHTS LIVE - EACH WEEK MIKE ANSWERS A NUMBER OF QUESTIONS WE RECEIVE HERE AT TDW - IF YOU WANT TO ASK A QUESTION, OR SEE WHAT OTHERS ARE ASKING - PLEASE JOIN US LIVE OR SUBSCRIBE TO OUR YOUTUBE, FACEBOOK OR WEBSITE LIVE FEEDS.

5PM UK TIME
Thursday Thoughts
LIVE

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Technical Authoring, Illustrations, CSDB, IETPs, ILS

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Technical Documentation, Technical Illustrations, Authoring Services, Integrated Logistics Support, AESP

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Technical Publications, Technical Authoring, Technical Illustrating, Computer Based Training, S1000D

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S1000D, CSDB, XML, BREX, BPM

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