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INDUSTRY &
GOVERNMENTS
HAVE A PROBLEM
CAN SX000i FIX IT?

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THE CHALLENGE

Logistics Support Analysis was codified into a US military standard in October 1973 with the publication of Military Standard 1388-1, 1388-1a superseded -1 in 1983 and was regularly updated until 1994.

From these early beginnings in UK we have seen we have seen Def Stan 00-60, JSP886, Def Stan 00-600 and the Defence Logistic Framework. There are similar standards and specifications throughout the world.

But none of these are fixing the problem that the Industry and Governments know they have – which is the need for cost effective, through life support solutions.

Can a commercial specification be implemented to address this challenge? And if so, what would this look like in real life?

THE PROBLEM(S) WITH INTEGRATED LOGISTIC SUPPORT (ILS)

ILS, when introduced, wasn't a 'how to' manual – which was what was probably needed – it was a contracting strategy and was taken too literally in some cases. The result was that industry began to produce overpriced support strategies. As these added little to the programme, they were often seen as an expensive add on.

Alongside this, the people employed by industry in ILS roles did not have the requisite qualifications, knowledge or engineering experience to apply ILS in an effective way. There was also little in the way of integration between design engineers and support engineers – the aim of ILS is

to educate the design from a support perspective, and that can only be achieved with both sets of engineers working hand in glove.

That kind of integration, in industry, was very rare.

The key to a cost-effective ILS programme is tailoring yet people were scared to tailor the ILS/ Logistics Support Analysis (LSA) programmes. Without intelligent use of the ILS standard, a disproportionate approach was often taken. This meant the exact same approach using all of the policies and practices regardless of the size of the programme.

The inability to be flexible in using only parts of the ILS standard was a huge contributor to its loss of reputation in the industry. Up until the mid 90's, these ILS strategies were simply being dusted off and re-used without anyone applying academic thought or rigour to the solution.

Working to tight deadlines and delivery schedules often meant the design moved on faster than ILS engineer could keep up with. The data needed to influence the design took time to collect, took time to analyse, and by the time this could have any meaningful impact, it was too late.

For those reasons, ILS very quickly lost its name and became something that the MoD mandated but which industry (which notable exceptions) didn't believe in.

THE ILS 'GET WELL' PACKAGE

Recognising that ILS was losing its footing, in the late 90s the UK MoD decided to update 00-60 which led in, April 2010, to Issue 1 of Def Stan 00-600.

THE GENESIS OF SX000i

1993 – Functional coverage and structure of ASD specifications agreed by NATO in Paris.

2003 – MOUs signed to establish relationships between supporting industry organisations. AIA and ASD signed up to the development of S1000D

2007 – ATA/ AIA/ASD sign a new MOU expanding S1000D into commercial aviation.

2010 – AIA and ASD sign an MOU 'to promote a common interoperable international suite of Integrated Logistic Support (ILS) specifications – the birth of the S series.

00-600 was a more top-level document, in common with the rest of the defence standards suite and although had moved on significantly from the previous 'contracting strategy' it still needed support. In essence, much of the detail from Def Stan 00-60 was lost in the creation of the Def Stan 00-600. Therefore, in December 2012 it was accompanied by JSP886 which contained much of the missing information. The two together worked to give industry an established ILS process. A few years later, on 4 October 2016, Defence Logistics Framework replaced JSP 886. Did these updates and new issues make ILS any better or more popular – not in my opinion!

ELSEWHERE IN THE WORLD...

Other organisations were producing ILS/LSA guidance:

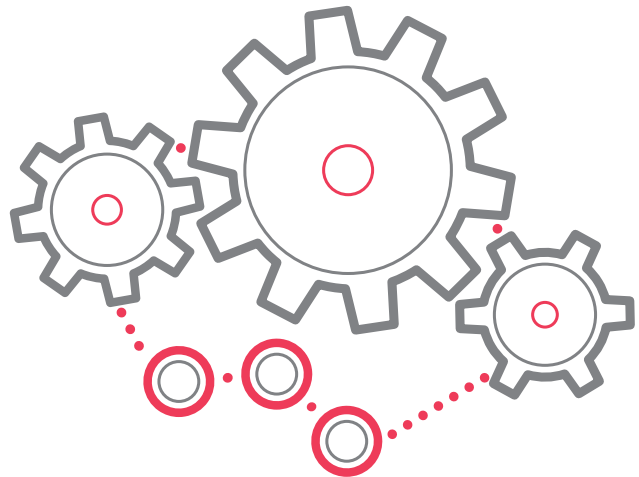
- **SAE TA/Std/0017** – Product Support Analysis
- **SAE GEIA/Std/0007C** – Logistics Product Data
- **SAE JA 1011, JA 1012** – Reliability Centred Maintenance
- **DEF (Aus) 5691** – Logistic Support Analysis
- **DEF (Aus) 5692** – Logistic Support Analysis Record

...and then there is the ASD S series specifications.

The international aerospace and defence community has over the past 20 years invested considerable efforts to develop specifications in the field of ILS.

The work was initially accomplished by integrated working groups composed of Industry, initially members of AeroSpace and Defence Industries Association of Europe (ASD) and customer organisations (Ministries of Defence, etc.) in a collaborative environment. The structure and functional coverage of these specifications was largely determined by NATO requirements specified during the international workshop "HAW Acquisition Logistics" in Paris in 1993.

In July 2010, a Memorandum of Understanding (MoU) was signed between ASD and its American counterpart the Aerospace Industries Association of America, Inc. (AIA) in order to promote a common, interoperable, international suite of integrated logistics support specifications in the aerospace and defence industries of Europe and the United States. To make optimal use of the resources available, ASD and AIA agreed to work in concert on the joint development of the S-Series ILS specifications.



2010 – AIA and ASD MOU to form the ILS specification Council – now called the IPS Council.

2010 – recognition of the need for a top-level specification to ensure compatibility and commonality of IPS processes.

2011 – decision made to develop, publish and maintain an ILS Guide – June 2011 SX000i WG was formed and in 2012 the title was approved by the ILS Council.

December 2015 – Issue 1 of SX000i was published, 1.1 in July 2016, 1.2 in July 2018. Issue 2.0 imminent with Issue 2.1 in the Spring of 2021.

April 2019 – ILS Council agree to move from ILS to IPS and rename to IPS Council.



THE 'S' SERIES VISION

The vision for the S series IPS specifications is that all stakeholders will be able to apply common Product Support Processes to enable the exchanging and sharing of data securely throughout the life of Products and Services.

The ASD Specifications

- **S1000D** - International specification for technical publications using a common source database
- **S2000M** - International specification for material management
- **S3000L** - International specification for Logistics Support Analysis
- **S4000P** - International specification for developing and continuously improving preventive maintenance
- **S5000F** - International specification for in-service data feedback
- **S6000F** - International specification for training analysis and design

THE PURPOSE OF SX000I

- Explains the vision and objectives for the S series specifications.
- Provides a framework that documents the IPS process and interactions.
- Explains how the S series IPS specifications interface with other domains
- Provides guidance on how to satisfy business requirements
- Describes how to carry out an IPS programme
- Gives contracting guidance for SX000i and other S series
- Delivers a Data Model and data elements in XML schema that can be used to exchange IPS data across stakeholders.

DOES SX000I ADDRESS THE PROBLEMS OF ILS?

We've already agreed that industry did not fully understand that 00-60 was a contracting strategy and began to produce over-priced support strategies, that those employed by Industry in ILS roles did not always have the depth of engineering knowledge, and that design engineers and support engineers needed to work hand in glove. So, does SX000i address and solve the problems of ILS?

Let's look at some of the problems again and how these are being addressed:

Industry did not fully understand that 00-60 was a contracting strategy and began to produce over-priced support strategies.

SX000i is an IPS guide which can be used by primes, original equipment manufacturers (OEMs) and suppliers as a reference document to evaluate Product support strategies and projects

The key to a cost-effective ILS programme is tailoring yet people were scared to tailor the ILS/LSA programmes.

SX000i cannot remove the fear of tailoring but it does show in Chapter 7 how to tailor and contract against the specifications. Also gives guidance on re-visiting legacy contracts within scope

Developing a cost-effective ILS support strategy takes thought and rigour; not that abundant in Government. More common was the practice of 'dusting off' previous strategies.

Education of Support Engineers has always been a challenge, but this has improved during the last 10 to 15 years with specialist ILS and Logistics Engineering Masters programmes being developed and delivered. 'Dusting off' still happens but I think the message is getting out there. A challenge emerging is the use of non-specialist support chain and engineering personnel in Total Through Life Support roles. SX000i provides a framework for developing a cost effective IPS strategy

Very often the design moved on faster than the ILS engineer could cope with, so they got left behind.

SX000i now provides an XML Data Model and modelling guidance in Chapter 8 and 9. On commercial off-the-shelf based programmes the emphasis is on educating the systems integration rather than the product design

ILS very quickly 'lost its name' and became something that the MoD wants us to do but we in Industry (with notable exceptions) do not really believe in it.

Major industry players such as Airbus, Boeing, Leonardo, Lockheed Martin and Government actors such as UKMoD, Bundeswehr, Department of National Defence (Canada), OCCAR, have all committed to SX000i and the wider S series specifications. Notably, the latest issue of Def Stan 00-600 calls out all the S series specifications.

Conclusion

To conclude, SX000i has the potential to really drive improvements in how we make Through Life Support more cost effective, but we need to accept that tailoring packages and support influencing design are going to have the biggest impact regards cost efficiencies overall. The S series specifications as a whole provide the data models necessary to ensure effective usage data transfer across the User/Supplier boundary. Moreover, they provide the potential for the Supplier to use this data to offer real enhancements to the product or system.

If you're looking to work with a company who understand not only SX000i, but also the full Integrated Product Support discipline, contact CDS Defence & Security today.

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