Technology

Net Zero for TDLs: TDL Integration and Net Zero



Guest Article from ATEQ: Alternative Approach to TDL IO Management

In the News: Latest News from Defence Industry Published by SyntheSys for the Tactical Data Links Community



SYNTHESYS DEFENCE TRAINING COURSE DATES 2023

January 09-18 | Multi TDL, Bonn, Germany

April 03-21 | DLM/ICO, Den Helder, Netherlands

June 12-15 | Network Design, Bonn, Germany

FULLY BOOKED Advanced Network Design, Hungary

August 23-25 | MIDS Link 16, Venray, Netherlands

October 10-12 | Link 22, Delivered Online

October 16 - November 03 | DLM/ICO, Location TBD

December 04-06 | MIDS Link 16, Bonn, Germany

For more information, visit: https://www.synthesys-defence.co.uk/training.html

TDL = Tactical Data Links | MIDS = Multifunctional Information Distribution System | DLM/ICO = Data Link Manager/ Interface Control Officer



Letter from the MD



Today's Complex and Interwoven Multi-Link Environment

Welcome to Issue 15 of TDL Technology Magazine. Whether you are an avid reader or new to the fold, I hope that the magazine proves to be useful and enjoyable.

As appetites for innovation within the defence arena strengthen and the community navigates the opportunity and challenges presented by national and global net-zero objectives, our Senior Consultant, Kate Chandler, explores how increasing demand can be met whilst providing the vital assurance and validation processes that are critical to multi-domain operations.

I would like to extend my personal thanks to Jeff Hymers and Tony Smith from ATEQ Consulting for their article contribution (Pages 8-10) which dives deeper into an alternative approach to TDL Interoperability Management in times of budgetary constraints and a lack of resources.

As usual, you can find a collection of TDL and related defence industry news on Page 11, and you'll also find details of our 2023 Training Course schedule on Page 2. Details of our free online training can be found on Page 4.

With so much happening for us and the community right now, we look forward to attending flagship TDL events. We hope to meet with colleagues and customers at the upcoming NATO Tactical Data Link Symposium (NTDLS) and we also plan on attending the International Data Link Symposium (IDLS) later in the year.

I welcome and encourage you to subscribe to receive future issues directly to your mailbox at www.tdl-technology.com

Very best regards,

Mark Hudspeth Managing Director SyntheSys Defence Limited

Editorial

Editor: Sarah Thomas email: sarah_thomas@synthesys.co.uk

Copy Editor: Penny Morgan email: penny_morgan@synthesys.co.uk

> Contributors: Mark Hudspeth, Kate Chandler

With Special Thanks to: Jeff Hymers and Tony Smith, ATEQ Consulting

Printing: Illustrated Stationery Ltd

©2023 SyntheSys Systems Engineers Ltd

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, including photocopying, recording, or other electronic or mechanical methods, without the prior written permission of the editor, except in the case of brief quotations embodied in critical reviews and certain other non-commercial uses permitted by copyright law.

The contributing organisations are solely responsible for the content within the associate article.

Contains public sector information licensed under the Open Government Licence v3.0

Unless otherwise accredited, all military photographs in this issue are © Crown copyright 2023 www.defenceimagery.mod.uk

Spring 2023: Issue 15

To subscribe: www.tdl-technology.com



Contents

News

- 5 SyntheSys News The latest news from us
- 11 In the News Interesting defence and TDL news pieces from around the globe

Features

- 6 Multi-Domain TDL Technology -A Journey to Net Zero How can Net Zero be achieved economically during development and integration
- 8 An Alternative Approach to TDL Interoperability Management Exploring IO Integration, evaluation analysis, information, standards and the future





Join us for free online training courses which introduce the principles and theory behind Tactical Data Links.

22 MAY 2023 AN INTRODUCTION TO NETWORK DESIGN

This session provides participants with an understanding of TDLs and their role in Network Design. Through this course, participants will be introduced to the processes of how to design and implement secure and reliable TDL networks that meet the needs of modern military operations.

06 SEPTEMBER 2023 AN INTRODUCTION TO LINK 22

This session provides a high-level overview of the characteristics of Link 22, briefly describing the system architecture, as well as examining the capabilities provided by the Link 22 message catalogue.

20 NOVEMBER 2023

AN INTRODUCTION TO MIDS LINK 16

This session provides a high-level overview of the characteristics of MIDS Link 16, briefly describing the functionality of the MIDS terminal, as well as examining the capabilities provided by the Link 16 message catalogue.

REGISTER NOW

https://www.synthesys-defence.co.uk/ free-tdl-training.html

SyntheSys News

SyntheSys Certified Under the Cyber Essentials Plus Scheme

Our commitment to Cyber Security has been a long-standing priority. In addition to risk mitigation and management, it ensures we meet the contractual needs of our supply chain. Which is why we are thrilled to announce that we have once again passed the stringent controls required to maintain the certification for a sixth consecutive year.

SyntheSys' IT Lead, Luke McCarthy comments on the changing requirements: 'This latest assessment marks the biggest update to Cyber Essentials technical controls since its launch. With cloud services being brought fully into scope, I'm proud to say that our cloud offerings are

accredited to Cyber Essentials Plus, alongside our whole organisation's infrastructure. The need for effective cyber security is critical to our organisation and our customers, and I am pleased that we have once again passed the requirements of certification'.



If you would like to hear more about the Cyber Essentials Plus

certification, or the work we are doing in this area, contact: info@synthesys.co.uk

Training Success, Portuguese Air Force DLMC – Data Link Manager/Interface Control Officer Course

The Tactical Data Link (TDL) travel and course delivery continues, and we are happy to announce the successful completion of our Data Link Manager/Interface Control Officer (DLM/ICO) course, held at the Portuguese Air Force Base, Data Link Management Cell (DLMC) in Lisbon, Portugal from 3-21 October.

As the DLM/ICO is responsible for the entire TDL interface to include both planning and execution functions, it is critical the training scope is vast and comprehensive. Over the course of three weeks, military members across various services representing Portugal, Belgium, Denmark, Norway, Czech Republic, Sweden, and Finland were provided with an in depth understanding of how to plan, build, interact and subsequently manage Multi TDL architectures. Having such a diverse group of students made for a rewarding learning experience which enabled attendees to learn and work together, while also forming relationships that will no doubt prove valuable in the operational world. The course focused on providing students with a series of

challenging learning outcomes using practical exercises, simulation, and real-world operational software. This interactive process promotes a cooperative learning environment, allowing each student to progress with confidence and develop a thorough understanding of each TDL. Through the development of this knowledge, TDL planners and operators are better equipped to identify and execute commanders' information exchange requirements, both in training and operational environments.

To learn more about our best-in-class TDL and related training, visit: http://www.synthesys-defence.co.uk/data-link-training.html

Or to talk to us about upcoming training courses, your training requirements, or our training format, please start the conversation by emailing: training@synthesys.co.uk

Multi-Domain TDL Technology - A Journey to NetZero

How Can NetZero be Achieved Economically During Integration Development?

Editor's Note: This article formed the basis of SyntheSys' presentation at the International Data Links Society Symposium in Halifax, Nova Scotia, November 2022.

Next Generation | Multi-Domain Operations | Net Zero | Economic Crisis. The period of complacency and relative comfort in the application of Tactical Data Links (TDL) has dissolved almost overnight and there are many questions that need to be addressed if fundamental capabilities can continue to be delivered effectively.

Why? What has changed? Recent technological developments and the rapid pace of Next Generation¹ and Generation After Next² platforms, piloted, collaborative and autonomous, are demanding the exponential increase in secure data transfer. How can this increasing demand be met whilst providing the vital assurance and validation processes that are critical in today's emerging environment?

The unprecedented expansion of Multi-Domain Operations, integrating Space, Air, Sea, Land and Cyber requires vast levels of increased testing, interoperability validation, live trials and assurance. How can this be delivered effectively, both nationally and world-wide, in a period of growing tensions, spiralling costs, and aspirational defence environmental considerations initially agreed by COP26?³. Exploring how TDL technology can support these requirements is an important aspect.

Cost Benefit Analysis⁴ and tandem application of live trials, executed simultaneously against multi-variable rig-based scenarios, can provide associated financial, environmental and assurance benefits. Focusing upon the importance of integrated Multi-Domain technologies, it is easy to forget that 6th Generation platforms such as: F-22; Tempest; the Future Combat Air System loyal wingman concepts; and Autonomous Collaborative Platforms, are already under development and will need the ability to integrate and be interoperable with ageing fleets - a challenge already faced by ourselves and our allies with F-35.

Whilst some nations appear to have infinite defence budgets, used to develop increasingly complex systems, the underlying requirement and foundation of information sharing remains. Consideration should be given to United Kingdom (UK) Ministry of Defence *Operational Costs* – the physical cost of delivering an effect using equipment, personnel and associated training, fuel and upgrades – it is time to appreciate that the UK MOD aspiration for NetZero by 2030, Government by 2040 and COP26 by 2050 targets could be a step closer through the use of simulation.

Government websites define the impacts and associated benefits of Carbon Negative, Carbon Neutral and Carbon Offset, measured against three Scopes: 1,2 and 3. Essentially, Scopes 1 and 2 are those emissions that are owned or controlled by a company or organisation (1 - Vehicle fuel, if not an electric fleet, 2 - Energy requirements to create the electricity, if needed, to power an electric fleet etc.). Scope 3 emissions are created because of the associated indirect activities which occur from sources not owned or controlled by the company or organisation, both up and down the value chain. Carbon offsets against the three scopes can be measured in lots of different forms - this may be employment generation, afforestation and greenhouse gas removal or direct air capture etc. Remove carbon dioxide, show avoidance or pay someone upon their behalf. If you offset as much as you emit you become carbon neutral; more so you can become carbon negative.

Industry also needs to consider the Law of Diminishing Returns – investment in a particular area increases and the rate of profit reaches a point where it can no longer increase if other variables remain constant. Carbon neutral developments can be expensive yet are vital; what must change?

The appetite to 'innovate rapidly and be prepared to fail' is a growing trend in today's defence industries⁵. When measured against national defence expenditure the growing pressures to increase productivity, minimise costs and offset defence environmental impact⁶ is foremost in every politician's mind, and they control the purse strings. Secure Satellite Communication projects in the United Kingdom have secured budgets exceeding £5Bn over the next decade, with the Space Domain Awareness programme, designed to integrate data and analysis from civil, commercial and classified source, boosted by an additional £85M.

¹Next Generation Air Dominance – US 6th Generation Fighter Programme – Eurasian Times 6th October 2021.

 ² Generation After Next – Anglo-Japanese Joint Engine Demonstrator Memorandum of Cooperation is a key example as announced by UK MOD in December 2021.
 ³ United Nations Climate Change Conference – Glasgow Climate Pact 13th

November 2021.

⁴ Systematic approach to estimating the strengths and weaknesses of alternatives.
⁵ Defence Expenditure – Innovation Challenges.

⁶ United Kingdom Royal Air Force aims to achieve Net Zero by 2040.

Meanwhile Intelligence, Surveillance, Reconnaissance (ISR) will receive investment exceeding £970M for the provision of spectral data and electronic intelligence, all of which have relevance to the provision of coherent, interoperable architectures and data sharing.

As a community we need to have the confidence to apply broader simulation and rig-utilisation in a mixed Multi-Domain integrated, interoperable and interchangeable⁷ environment. Strategies such as the Joint Concept Note, Integrated Operating Concept and ASTRA initiatives are seeking 90% of simulation activity for the future Royal Air Force (RAF) vision by 2050. The Royal Navy is seeking 75%/25% split by 2030. Land also needs to consider the process through which increased simulation can be utilised to best effect. What can we collectively achieve to facilitate the full potential of our existing technologies to succeed and flourish in a rapidly developing technological landscape?

The Defence and Security Accelerator is actively seeking carbon saving measure applications. If you were to consider the annual physical running costs of the Type 45 for example, open-source data indicates these costs would be in the region of £13.5 million per annum. These figures include those items that are directly attributable to the ship, such as personnel, fuel, port visits etc. They do not, however, include maintenance, training, and generation costs. Additional studies indicate that the daily running cost is in the region of £126k per day, equating to a far higher expenditure subject to operational demands, (real time circa £45 million).

In April 2022 at the IT2EC Conference, London, Commodore Andrew Stacey, commander of the Royal Navy's fleet operational sea training, announced that the Ministry of Defence had approved funding for the Defence Operational Training Capability (Maritime) program. The Royal Navy will be able fully embrace the world of computer-based training in tandem with live training indicating that the representation, agility, tempo and reach needed to deliver elective training to the right standards for Naval forces needed to adapt. The Royal Navy does have a few computer-based systems limited to specialised training areas, which comprise about 20% of training conducted. The aspiration is to increase synthetic training to a 50-50% split between live and synthetic training by 2024, and a 25-75% split by 2030.

In the Air domain the F-35 Joint Programme Office have reduced costs by 40% since initial introduction, seeking to reduce costs further, from circa £31k per flight hour to £21k per flight hour by 2025. Assuming an airframe would fly for 2 hours, three times a week, then at the lower-level costs savings would be in the region of £6.5 million per airframe per year, without the additional associated costs of personnel, and training. Apply the annual carbon footprints of these technologies and the potential benefits are clear. Defence should be committing exploitation, development, and innovation funding through the next Defence/Spending Review, to determine how to use emerging technologies for its benefit. The recent introduction of the Defence Sustainability initiative will hopefully go some way forward to address these challenges.

Of course, the TDL eco-system can deliver multiple direct, measurable benefits in support of the economic and environmental sustainability challenges faced. The fundamental building blocks of TDLs allow existing mindsets to be challenged whilst building upon innovation skills crucial to the evolving technologies and cross-domain activities that are daily business for Defence.

There is a multitude of TDL and standards applicability in use, compounded by a mix of Air, Maritime and Land specifications, and equipment. The challenges grow exponentially due to the rapid growth of developments in equipment capability. Include Artificial Intelligence (AI) and autonomous/collaborative swarm technologies, and the scoping requirements become vast. The updates to Link 16, such as Link Enhanced Throughput (LET), Concurrent Multi-Netting (CMN) and Concurrent Contention Receive (CCR) are important to consider in this context. In addition, open-source data identifies that the CMN4 programme greatly increases the amount of tactical information that can be exchanged network-wide, while simultaneously increasing the potential probability of reception, if configured correctly. When coupled with Enhanced Throughput, it is an information exchange game-changer in the future battlespace.

Like it or not, many biases exist in modern society. It's time to break the TDL bias and find the route to support future trials validation and integration with a 21st Century approach. This is achievable through gaining the maximum efficiencies and the associated ability to de-risk live events, by focusing upon simultaneous lab-based testing of emerging and existing technologies. Collectively saving money, supporting the introduction of new platform integration across all domains, and respecting the future aspiration of Net Zero, all of which complement and enhance the advantage of today's war-fighting environment.

⁷To exchange seamlessly.

Kate Chandler, Senior Consultant



AN ALTERNATIVE APPROACH TO TOL IO MANAGEMENT

GUEST ARTICLE PROVIDED BY ATEQ CONSULTING

In the 30 years that we have been involved with Tactical Data Links (TDLs), we have seen great strides in community cooperation, data sharing and process improvement, but recent pressures on budgets, staffing and timescales have shown that our current TDL Interoperability (IO) management processes may need to be refocused. Some elements of this article may be considered controversial and some of you reading this may disagree with our proposals, but... if this article only serves to make you stop and think about what we are currently doing and how we can improve that, it has achieved its objective.

Integration of TDLs into Platforms

The integration of TDLs into new and existing platforms is complex, often led by industry, and is all too often developed from a single platform perspective. As a result, some TDL programmes may lack a strong operational context for their requirements. Recent military operations have shown that a wider, multi-platform, and multi-national view is needed. The iSMART process was introduced almost 2 decades ago and still proves to be a good foundation for determining the implementation required for a platform and for assessing levels of IO between platforms. Unfortunately, over the years it has resulted in the production of a mountain of documentation that is expensive to develop/maintain, is not always used, and, in many cases, is not fully understood by industry, platform stakeholders or operators. Industry's response has been to create equally complex tools to aid the creation of these documents (some being 10,000+ pages).

The tools offered can be resource intensive, require significant training, with skills fade being an issue for many stakeholders/users. They also rarely fully embrace the needs of the operational community. The TDL standards which are manually created as reference data within the tools are both complex and living/evolving documents. Consequently, the reference data is subject to human error and the tools struggle to manage updated standard baselines in an efficient way. In some cases, the use of a "one size fits all" approach has led to an imbalance in the cost/benefit of employing the iSMART process. As an example, the benefits realised from the production of the full suite of iSMART artifacts for, say, a complex Command & Control (C2) Weapon System such as a Naval Destroyer, far outweighs the benefits that one would get for the provision of basic Situation Awareness picture in the cockpit of a tanker, however, the effort involved in both remains significant. Most governments are committed to "best-value" equipment acquisition and, increasingly, the preferred method to achieve this is through Modified Off-The-Shelf (MOTS) procurement. As a result, over the past decade, programmes have tended to move away from providing the full suite of iSMART documentation. This has mainly been due to time and cost limitations and the complexity of the tools needed to create those documents.

Interoperability Evaluation

Having an understanding of how well one's platform TDL solution will interoperate with other platforms in the TDL network is paramount. Hence, the iSMART requirement to undertake an Interoperability Evaluation (IOE) between platforms should be considered as sacrosanct. However, historically, IOEs have been carried out using an accumulation of technical documentation for each of the platforms to be evaluated. This has been time-consuming and expensive for programmes to accomplish. Inadequate training and skills fade in the development of the required iSMART documentation, using available tools, has contributed to a lack of fidelity of the data held and a lack of operational focus.



Figure 1 – IOE Inputs

As a consequence, legacy IOEs were technically-focused reports which largely became "shelf-ware". Over the last few years, however, we have seen some nations adopting a new approach to TDL IOEs. It focuses on a 3-step process: **Collect, Analyse and Inform.**

Collect

The data collected for an IOE may originate from a number of sources:

- Problems/issues identified during operations and exercises/training;
- Changes to the TDL standards;
- Problems/issues identified during TDL IO Testing;
- Platform implementation data (i.e. the Message Implementation Plan or MIP) supported by any known limitations (e.g. significant deviations from the standards).

Platform sponsors provide Information Exchange Requirements (IERs) from their platform's perspective, implementation data and any known implementation issues to the IO Manager who gathers the information on all platforms and undertakes the analysis process. Ideally, all inputs

Subject Platform	Object Platforms									
	-m			AWAC Demo						
Destroyer Demo	MRC	GBAD) Demo							
Information Definitions (IDF)	Т	R	Т	R	Т	R				
ra Friendly Forces	Т	R			Т	R				
Situation Awareness - Tracks	Т	R			Т	R				
Situation Awareness - Geographic Entities	Т	-	-	-	Т	R				
N Situation Awareness - EW										
🕎 Battle Management	Т	R	-	-	Т	R				
Engagement Status Reports	т	R	2	2	Т	R				
Fighter Report - Engagement of Airborne Target	-	R	-	-	Т	R				
🗧 Fighter Report - Engagement of Non Airborne Target		R	4	2	Т	R				
늘 C2 Report - Engagement Status Update	т		-	-	Т	R				
📒 C2 Intelligence Report - Hostile Engagement	Т	2	4	2	Т	R				
Battle Damage Assessment Reports	т	R		-	Т	R				
Relationship Between Assets	т		-		т	R				
Command - Air to Air	8				100	7.12				

Figure 2 – Example of IERs

should be provided in a consistent format, however, practical experience has shown that this is rarely the case, hence some form of normalised repository, which is simple and quick to populate, is employed.

Energian dama

Analyse

The implementation data collected for each platform is held centrally and IOEs are undertaken between various platform combinations, using the IERs to scope the operational data exchanges and bound the analysis. The data provided by the platform sponsors is analysed automatically and the analysis results are used to highlight problem areas for TDL subject matter expert evaluation.

Inform

The results of the IOEs are made available to acquisition staff, engineers, exercise/test directors, task force commanders and platform



Figure 3 – Automated Analysis

operators in a highly graphical format with data presented as appropriate to their roles and requirements. The analysis output is readable and navigable within a standard HTML browser, removing the need for multiple installations of expensive, bespoke, tools. In addition to the results from the analysis, more technically focused data can be provided in the output in terms of the MIPs and a summary of TDL Capabilities and Limitations ("Caps & Lims") for each platform.

The Caps & Lims summary provides stakeholders with an overview of platform TDL info such as:

- General configuration details regarding the TDL fit on the platform, such as link type, whether data forwarding and/or concurrent operations are possible for a multilink unit, baseline standards implemented, etc.;
- Link specific details such as: Terminal type; Tx/Rx NPG Assignments, BU2/JTRS functions implemented, ETR capable or not, etc. for Link 16; Bearer details, number of NILE Networks supported, SNC version, SPC version, etc for Link 22; JREAP protocols supported, number of JREAP links supported, etc.;
- Platform-specific network management "Information" issues (to support network planning and design) These issues are intended to reflect both platform nuances related to network management (e.g. limitations on dynamic changes to timeslot assignments, relay, etc.) and also platform transmit info which can be used to support network design (e.g. the platform will transmit up to 3 Jx.y words (I, E0, C1 or C2), with messages transmitted every 96 seconds on NPG 7 at medium priority).

The alternative approach to IO management being embraced by some nations has shown that the legacy method of IOE creation can be streamlined and significant time and budgetary savings made from the automation process and the re-use of a centralised repository of data.

In essence, by representing a single platform's TDL capabilities and limitations in a relational database, comparisons against other platforms can be automated; any newly discovered issues can be used to refine the platform representation, which are then automatically reused for any subsequent analyses.

TDL Standards Update

The IOE process also supports a largely automated update of the IOEs held within its central repository to reflect new TDL standard baselines and approved, urgent, Data Link Change Proposals (DLCPs). This has significantly reduced the level of effort needed to maintain the IOE repository.

Considerations for the Future

The defence budgets for nations are under considerable strain. When these budgetary constraints are combined with the lack of available resource in both public and industry sectors, our

community must find ways of reducing both the cost and complexity of TDL IO management.

We recommend that:

- The TDL Community employs an approach to the iSMART process that is appropriate/proportionate to the nature of • each programme, addressing issues such as MOTS procurement and the complexity of the integration. This will help define cost-effective and simplified methods for defining TDL requirements and implementation detail;
- Any software tools created to aid this process should consider both technical and operational perspectives and support automation as far as possible to reduce user induced inaccuracies and workload;
- Any outputs from software tools should be readily exploitable by a wide range of stakeholders with minimal training needed (e.g. web-based outputs);
- The production of TDL standards in Extensible Markup Language (XML) should be embraced as this will go some way to resolve the complexities of baseline updates where the tools are able to exploit those XML artifacts.

Destroyer Demo													Figure 5 –	Example				
													Caps & Lir	ns				
Operational Description	The Pow Expedition	vick class guided i onary Strike Grou	missile destroyer provider	s multi-mission offensive an	nd defensive capabilit	es. It can opera	ate independently	y or as part of Carrier S	trike Groups, Surf	ace Action Grou	ips, and							
Platform Configuration No	es All varia	nts of the Powick	class have implemented I	Links 16 & 22.														
Platform ISD	01/04/20	017																
Platform OSD	01/04/20	029																
TDL Employment																		
	Link 16		Link 22	JREAP	Link 11A	Link 11B	VMF(Messa	ges) VMF(Header)	VMF(Bearer)	IDL	Link	1						
Employed?	Yes		Yes	Yes	No	No	No			140	No							
Baseline Standard 5516 Ed Notes	lition 8/ATDLP-5.	16(B)(1) 5522 E	d 5/ATDLP-5.22(A)(2) 5	518 Ed 4/ATDLP-5.18(C)(1	0 -	<i>*</i>	*	8	5	1		-						_
TDL Forwarding							-					F	igure 6 – M	IP with K	now	n Iss	ues	
	Link 11 - 16	Link 11 - 22	Link 16 - 22	Link 16 M	MIDS - JREAP	2		D	estroyer De	emo			0					
Data Forwarder	No	No	Yes		Yes			D	estroyer L1	6 Demo								
Concurrent Interface Unit	No	No	Yes 5616 Edition \$/ATDLP	6 16/RV1) 5615 Edition 8	Yes RATDI P.6 16/RV1)		-	and the second se										
Notes								- 40		_						_		
TDL Baseline Details						Mes	ssage Eleme	nt				-			Fransmit	Rec	eive	
> [Link16] New Link 16 8	aseline					~	J3.0 R	leference Point							т	R		
> [Link22] New Link 22 B	aseline					>	J3.0I	REFERENCE POINT IN	NITIAL WORD						т	R		
> [Link22] New Link 22 B	aseline					>	J3.0E0	REFERENCE POINT E	XTENSION WOR	RD					т	R		
> [JREAP] New JREAP B	aseline					>	J3.0C1	REFERENCE POINT C	ONTINUATION	WORD 1					T	R		
						>	J3.0C2	REFERENCE POINT C	ONTINUATION	WORD 2					т	R		
TDL Specifications and Net	work Manageme	ent Issues				>	J3.0C3	REFERENCE POINT C	ONTINUATION	WORD 3					т	R		
Destroyer L16 Demo						>	J3.0C4	REFERENCE POINT C	ONTINUATION	WORD 4					т	R		
Destroyer L22 Demo						>	J3.0C5	REFERENCE POINT C	ONTINUATION	WORD 5					т	R	¢	
						>	13.006	REFERENCE POINT C		WORD 6					т	B		
To read more about ATEQ's services. visit:					5	J3.1 E	mergency Point							т	R	Ð		
https://www.ateg-consulting.com/insight						12.2	ir Track							т	P			

https://www.ateq-consulting.com/insight



Jeff Hymers & Tony Smith, ATEQ Consulting

TDLS - IN THE NEWS

PIECES FROM AROUND THE GLOBE

BAE Systems successfully integrates Akeron missile into CV90

January 2023 | https://bit.ly/3jBxOqd

BAE Systems with pan-European missile maker MBDA successfully integrated a fifth-generation tactical combat missile into the CV90 fighting vehicle. As noted by the MBDA, the Akeron MP missile has been fired from the BAE Systems Hägglunds CV90 infantry combat vehicle at a test range in Northern Sweden, in the presence of representatives of the Swedish Armed Forces.

Swedish-made fighter jet could tip the scales against Russia in Ukraine, but it might not get there any time soon

February 2023 | https://bit.ly/3x7z1c0

Sweden's JAS 39 Gripen-C fighter, designed for rugged environments, could help Ukraine stay in the fight. But there aren't many Gripens available, and training Ukrainian pilots on them will take time. Sooner or later, Ukraine must induct new jet fighters into service.

Viasat Completes Sale of Link 16 Tactical Data Links Business to L3Harris

January 2023 | https://prn.to/3RGHuwb

Viasat Inc. completed the sale of its Link 16 Tactical Data Links (TDL) business to L3Harris Technologies (NYSE: LHX) for approximately \$1.96 billion in cash. The net proceeds to Viasat are expected to be approximately \$1.8 billion after estimated taxes, fees and other expenses.

Viasat intends to use the proceeds to reduce net leverage and increase liquidity.

Curtiss-Wright to Support US Air Force Flight Tests with Data Collection Platform

February 2023 | https://bit.ly/3DVxIWD

The US Air Force has awarded Curtiss-Wright a \$287-million contract to deliver its high-speed data acquisition system (HSDAS). HSDAS uses radio frequency links to collect, process, and transmit data from planes to aircrews. The platform also analyzes and displays information for users.

The Spanish Ministry of Defence contracts Indra for Spanish airspace surveillance + control centers

January 2023 | https://bit.ly/40SrxY3

The Spanish Ministry of Defence has awarded Indra a project to modernize and upgrade the nation's command, surveillance, identification and control (ARS) centers that are essential for combating potential threats to the country's airspace.

Wildcat gets a new eye in the sky

January 2023 | https://bit.ly/40Hq06G

The TDL is a joint project between the Army and the Royal Navy that includes two data links, Link 16 and Bowman Data.

The TDL will be integrated into Wildcat's existing sensor suite, reducing the need for voice communications and increasing its ability to work with other digital networks.

Hanwha Systems to Develop Link-22 Tactical Data Links

December 2022 | https://bit.ly/3Xa2Kvi

Hanwha Systems will begin developing Link-22, tactical data links being introduced by North Atlantic Treaty Organization (NATO) member countries such as the United States and the United Kingdom. Link-22 aims to respond to future network-centric warfare (NCW) and strengthen Korea-U.S. combined operation capabilities.

DATA LINK MANAGER INTERFACE CONTROL OFFICER TRAINING COURSE





Our flagship training course provides a comprehensive understanding of TDL systems, operations and the role and responsibilities of a DLM/ICO

For more information, visit: https://www.synthesys-defence.co.uk/dlm-ico-training.html

