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NATO Interoperability Standards and Profiles

Volume 2

Agreed Standards

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C3B Interoperability Profiles Capability Team

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1. INTRODUCTION

001. Volume 2 of the NISP focuses on agreed interoperability standards and profiles. This is the short-term step describing the state-of-the-art of NATO systems today and the framework for new systems actually under procurement or specification.

002. The NISP references Standards from different standardization bodies. In the case of a ratified STANAG, NATO Standardization procedures apply. The NISP only references these STANAG's without displaying the country-specific reservations. The country-specific reservations can be found in the NATO Standardization Agency Standards database.

003. The Combined Communications Electronics Board (CCEB) nations will use NISP Volume 2 Chapter 3 and Section 3.3 tables to publish the interoperability standards for the CCEB under the provisions of the NATO-CCEB List of Understandings (LoU)¹. For the CCEB Chapter 4 is only applicable to the CCEB Nations when taking part in NATO lead operations.

1.1. SCOPE

004. The scope of this volume includes:

- Identifying the standards, profiles and technologies that are relevant to a service oriented environment,
- Describing the standards, profiles, and technologies to support federation.

¹References:NATO Letter AC/322(SC/5)L/144 of 18 October 2000, CCEB Letter D/CCEB/WS/1/16 of 9 November 2000, NATO Letter AC/322(SC/5)L/157 of 13 February 2001

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2. REFERENCE MODELS: TRANSITION FROM PLATFORM CENTRIC TO SERVICE ORIENTED MODELS

005. Information technology has undergone a fundamental shift from platform-oriented computing to network-oriented computing. Platform-oriented computing emerged with the widespread proliferation of personal computers and the global business environment. These factors and related technologies have created the conditions for the emergence of network-oriented computing. This shift from platform to network is what enables the more flexible and more dynamic network-oriented operation. The shift from viewing NATO and partner Nations as independent to viewing them as part of a continuously adapting network ecosystem fosters a rich information sharing environment.

006. This shift is most obvious in the explosive growth of the Internet, intranets, and extranets. Internet users no doubt will recognize transmission control protocol/internet protocol (TCP/IP), hypertext transfer protocol (HTTP), hypertext markup language (HTML), Web browsers, search engines, and Java¹ Computing. These technologies, combined with high-volume, high-speed data access (enabled by the low-cost laser) and technologies for high-speed data networking (hubs and routers) have led to the emergence of network-oriented computing. Information “content” now can be created, distributed, and easily exploited across the extremely heterogeneous global computing environment. The “power” or “payoff” of network-enabled computing comes from information-intensive interactions between very large numbers of heterogeneous computational nodes in the network, where the network becomes the dynamic information grid established by interconnecting participants in a collaborative, coalition environment. At the structural level, network-enabled warfare requires an operational architecture to enable common processes to be shared.

007. One of the major drivers for supporting net-enabled operations is Service-Oriented Architectures (SOA). SOA is an architectural style that leverages heterogeneity, and thus inherently platform-neutral. It is focused on the composition of Services into flexible processes and is more concerned with the Service interface and above (including composition metadata, security policy, and dynamic binding information), more so than what sits beneath the abstraction of the Service interface. SOA requires a different kind of platform, because runtime execution has different meanings within SOA. SOA enables users and process architects to compose Services into processes, and then manage and evolve those processes, in a declarative fashion. Runtime execution of such processes is therefore a metadata-centric operation of a different kind of platform -- a Service-oriented composite application platform.

008. Network-enabled operations are characterized by new concepts of speed of command and self-synchronization.

009. The most important SOA within an enterprise is the one that links all its systems. Existing platforms can be wrapped or extended in order to participate in a wider SOA environment. NATO use of the NISP will provide a template for new systems development, as well as assist in defining the path for existing systems to migrate towards net-enabled operations.

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3. STANDARDS

3.1. INTRODUCTION

010. This purpose of this chapter is to specify the NISP standards. The document organizes these standards into five service areas, following NATO's C3B Classification Taxonomy, as published on June 15, 2012. A graphical representation of this taxonomy is given in the following figure and a description of it can be obtained at: http://tide.act.nato.int/tidepedia/index.php?title=NATO_C3_Classification_Taxonomy

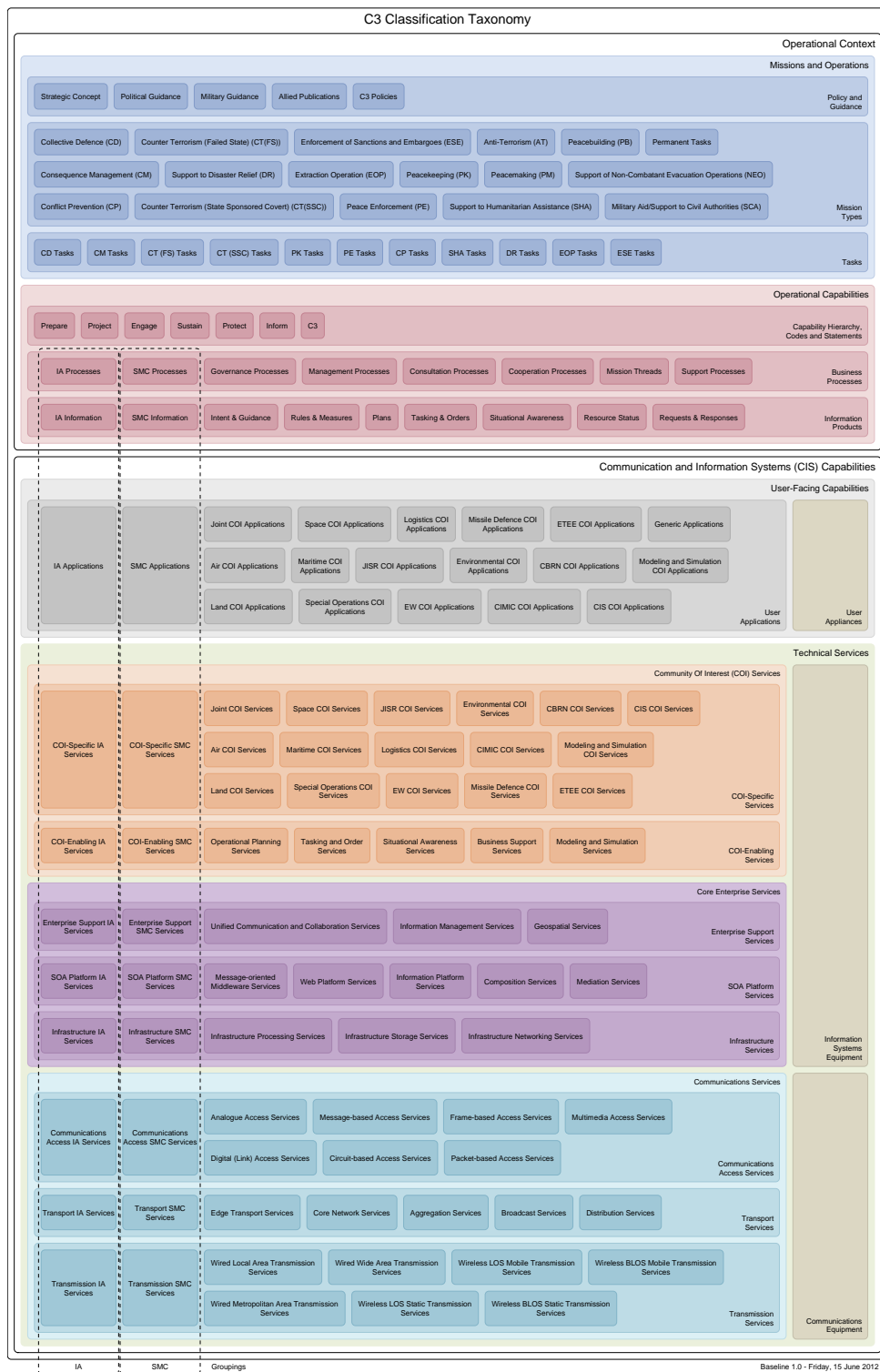


Figure 3.1. C3 Classification Taxonomy

011. This section describes the role and requirements of each service area, and presents all associated standards in tabular form. The tables refine each service area into one or more service

categories, with service components mapping to one or more mandatory, emerging or fading categories (see NISP vol.1). A remarks column provides optional supplementary information on each standard plus CCEB-specific information.

3.1.1. Releasability Statement

012. In principle, NISP includes only standards/STANAGs/documents, which are generally available for NATO/NATO member nations/CCEB.

013. However, a subset of documents are only available for those nations/ organisations, which are joining a specific mission or are member of a special working group (I-ICWG). The membership in these activities is outside the scope of NISP.

3.2. COMPARISON TO FORMER NISP VERSIONS

014. In comparison to the former version, this NISP is structured following the C3 Classification Taxonomy, as published by the C3B in June 2012. To allow a transformation from the old to this new structure, automatic tools were used. Nevertheless, not all entries (neither in the old, nor in the new structure) are well placed, as they are artificially assigned to the structure. A pure service oriented approach will lead to the result that these old entries will disappear in the future, when the relevant systems, where these standards were used, become obsolete.

3.3. TECHNICAL SERVICES

015. Technical services provide fundamental support to service based frameworks both in the form of information integration and communication services, and in the form of COI independent general service building blocks.

016. COI services provide more specialized services in order to give the business more specific business benefits within a “domain” or “area of interest”.

017. A COI is a collaborative group of users who have shared goals, interests, missions or business processes that result in information exchange and shared vocabulary.

018. Information services include services that are either made available to all users by the infrastructure, or are mandatory to be provided by all users, by all providers or by all consumers. Information services also include specification of services of general interest that may be voluntarily exchanged by any parties on the network. Currently, information services are based only on Core Enterprise Services (CES), but may be extended in the future.

019. Any service based framework, such as the Business Process Infrastructure Framework (BPIF), needs to provide a basic set of services that support and facilitate implementation and deployment of actual business services and processes. Such basic services are usually referred to as Core Enterprise Services.

020. Here we will provide an overview of such CESs in a BPIF context in terms of the way such services are categorized. A few examples of CESs in each category is also provided, but a

complete set of well defined core services cannot be provided as it to a large extent will depend on the actual implementation of the BPIF.

021. Core services in a BPIF context are divided into two main categories according to their primary role in the implementation of business services and processes.

3.3.1. List of Core Enterprise Services

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			Community Security Re-quirements Statement ab-stract, v1.1 (NATO:2010)		<i>Used in profile: AMN</i>
		Common Cri-teria (ISO/IEC 15408-1:2009, -2 to-3:2008)			Procedural doc-ument dealing with the evalu-ation criteria for IT security. Guidance on the use of Com-mon Criteria within NATO is provided with AC/322-D(2010)0043.
		Physical char-acteristics (ISO/IEC 7810:2003)			
		Integrated cir-cuit(s) with electrical con-tacts (ISO/IEC 7816:2006)			Base profile, consisting of parts 1-5)
		Interface between the card aware ap-plications and			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		cards, PC/SC Specs. v.2.0.1.9:2005			
		Card-resistance al-lications, JA-VACARDkit v.2.2.2:2006			
		Contactless cards (ISO/IEC 14443:2008)			Base profile, consisting of parts 1 - 3.
		Java Enter-prise Edi-tion Specifi-cation (JAVA EE v.7:2012), (JCP:2012)			
		Java Stand-ard Edition 6 (JAVA SE v.6:2006), (JCP:2002)			
			Java Remote Method Invoc-ation (JRMI), (JCP)ed.1.5.0:2004		
			Java API for XML Pro-cessing (JAXP) v.1.3, (JCP:2004)		
			Java Naming and Direct-ory Interface (JNDI) ed. 1.2, (SUN:1999)		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		JNLP v6.0:2011, JCP			
		JAVA Server Pages JSP v2.1:2009, JCP			
		JAVA Servlets v3.0:2009, JCP			
Enterprise Support Services					
			Semantics of Business Vocabulary and Business Rules, Vers. 1.0 (SBVR); OMG 2008		
Unified Communication and Collaboration Services					
		Media Gateway Control Protocol v3(ITU-T H.248.1:2005)			Protocol for managing the multi-media gateways between circuit switched and packet switched networks.
			Synchronized Multimedia Integration Language (SMIL 3.0):2008 (W3C)		Language for multimedia products based on XML.

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Advanced Dis-tributed Learn-ing (ADL) (STANAG 2591:2013)			
	Audio-based Collaboration Services				
		Packet-based Multimedia Comms Sys-tem (ITU-T H.323:2009)			Used in Pro-files: AMN, FMN
		G.722.1C 14kHz audio codec (ITU-T G.722.1 An-nex C:2012)			Used in Pro-files: AMN, FMN
		Rich Text Format (RTF) v.1.9.1:2007 (MS)			Basic docu-ment inter-change format
		ASCII Text, ISO 646:1991			For constrained environments
		UTF-8 (IETF RFC 3629:2003)			Universal Text Format
		Document Ob-ject Model (DOM) Level 3:2004 (MS)		Document Object Model (DOM) Level 2 (MS)	Basic Docu-ment Object Model .
		Office XP formats:2003 (MS)		Office 2000 formats: Office XP	Office 2000-formats not to be used for new systems.

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					Pertains to the interchange formats of MS Word, Excel and Power-Point, irrespective of the actual MS Office version or general office automation package being used.
		OpenDocu-ment (ODF) ISO/IEC 26300:2006			Formerly published as OAS-IS standard. Used in Profile: FMN
			Office Open XML, ed.1 (ECMA-376)		<i>Used in Profiles: AMN, FMN</i>
		Office Open XML, ISO/IEC 29500:2012			XML variant of Microsoft Office. Used in Profiles: AMN, FMN
		HTML 4.01 (ISO/IEC 15445:2000)	HTML 5.0 (W3C ED html5:2012)		Used in Profiles: AMN, FMN, tactESB
		HTML 4.01 (RFC 2854:2000)			Used in Profiles: AMN, FMN, tactESB
	Text-based Collaboration Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Data Form (XMPP Standards Foundation, XEP-0004:2007)			Used in Profiles: AMN, FMN
		Data Form (Service Discovery, XEP-0030:2007)			Used in Profiles: AMN, FMN
		XMPP (IETF RFC 6120:2011 - 6121:2011)			Three different, non-overlapping profiles for AMN and FMN - Details: see NISP Vol 3. Used in Profiles: AMN, CES, FMN
	Video-based Collaboration Services				
		Multinational Videoconferencing Services (ACP 220:2008)			
		Narrow-band visual telephone systems and terminal equipment (ITU-T H.320:2004)			
	Calendaring and Scheduling Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Formal Mes-saging Ser-vices				
		Military Mes-saging (STANAG 4406 Ed.2:2006)		ACP120 replaced by ACP145	This includes PCT (protected content type). PCT may be used for protec-tion of data ob-jects in systems. For CCEB in-teroperability the mandat-ory standard is ACP145 (Gate-way-to-Gateway Mes-saging Proto-cols)
		ADatP-3(A), CONFOR-METS (STANAG 5500, ed. 7:2010)			Used in Pro-files: AMN, FMN
		APP-11(C) Change 1, NATO Mes-sage Catalogue (STANAG 7149 ed.5:2010)	APP-11(D)		APP-11 (STANAG 7149) as the single source for NATO Mil-itary Messages for command and control of NATO forces at all levels of the Chain of Com-mand down to

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					<p>and including individual units.</p> <p>For CCEB interoperability the standard is MIL-STD 6040 and OTH-T GOLD standards</p> <p>Used in Profiles: AMN, FMN (ed.4)</p>
			Variable Message Format (DoD Mil-Std 6017B:2009)		
		Interoperability of Low-Level Ground-based Air Defence Surveillance, Command and Control Systems (STANAG 4312 Part I, ed.2:2009)			
		S/MIME with Encrypted Security Service (ESS) (IETF RFCs 3850:2004, 3851:2004)		ACP120 replaced by ACP145	Messaging System independent encapsulation syntax supporting signature and confidentiality functions based on DSA.

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					For CCEB interoperability the standard is S/MIME Version 3 ESS, application layer data confidentiality or link level encryption
			ITU-T X.411:1999		
			SCIP Key Management Plan, SCIP-120 rev.1.0:2010 (IICWG)		
			SCIP X.509 Key Management Plan, SCIP-121 rev.0.8:2012 (IICWG)		
			SCIP Signalling Plan, SCIP-210 rev.3.5:2012 (IICWG)		For CCEB interoperability the SCIP standard is mandatory Used in Profile: FMN
			SCIP Multimedia Option-Specific MERs for SCIP Devices, SCIP-213 rev.1.0:2012 (IICWG)		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			Generic Pack- et Data Option, SCIP-213.1 rev.1.0:2010 (IICWG)		Used in Profile: FMN
			Network Spe- cific MERs for SCIP Devices, SCIP-214 rev.1.2:2011 (IICWG)		Used in Profile: FMN For CCEB in- teroperability the SCIP stand- ard is mandat- ory
			SCIP over the PSTN, SCIP-214.1 rev.1.0:2008 (IICWG)		For CCEB in- teroperability the SCIP stand- ard is mandat- ory
			SCIP over RTP, SCIP-214.2 rev.1.0:2010 (IICWG)		For CCEB in- teroperability the SCIP stand- ard is mandat- ory
			U.S. SCIP/ IP Implement- ation Standard and MER Pub- lication, SCIP-215 rev.2.2:2011 (IICWG)		Used in Profile: FMN For CCEB in- teroperability the SCIP stand- ard is mandat- ory
			Minimum Es- sential Re- quirements (MER) for V.150.1 Gate- ways Publica- tion, SCIP-216		For CCEB in- teroperability the SCIP stand- ard is mandat- ory Used in Profile: FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			rev.2.2:2011 (IICWG)		
			Requirement Document, SCIP-220:2006 (IICWG)		Used in Profile: FMN For CCEB interoperability the SCIP standard is mandatory
			Minimum Implementation Profile (MIP), SCIP-221 rev.3.0:2011 (IICWG)		For CCEB interoperability the SCIP standard is mandatory Used in Profile: FMN
			Cryptography Specification for SCIP, SCIP-231 rev.1.3:2008 (IICWG)		For CCEB interoperability the SCIP standard is mandatory
			SCIP Cryptography Specification - Main Module, SCIP-233 rev.1.1:2012 (IICWG)		For CCEB interoperability the SCIP standard is mandatory Used in Profile: FMN
			Universal Call Setup Encryption (CSE) Key Material Format and Fill Specification,		For CCEB interoperability the SCIP standard is mandatory

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			SCIP-233.106 rev.1.1:2012 (IICWG)		
			MERCATOR Call Setup Encryption (CSE) Key Material Format and Fill Specification, SCIP-233.110 rev.1.0:2012 (IICWG)		For CCEB interoperability the SCIP standard is mandatory
			MERCATOR Call Setup Encryption (CSE) Specification, SCIP-233.202 rev.1.0:2012 (IICWG)		For CCEB interoperability the SCIP standard is mandatory
			ECDH Key Agreement and TEK Derivation, SCIP-233 rev.1.1:2011 (IICWG)		For CCEB interoperability the SCIP standard is mandatory
			MERCATOR ECDH Key Agreement and TEK Derivation Specification, SCIP-233.308 rev.1.0:2012 (IICWG)		For CCEB interoperability the SCIP standard is mandatory
			Interoperable Terminal Priority (TP)		For CCEB interoperability the SCIP stand-

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			Community of Interest (COI) Specification, SCIP-233.350 rev.1.0:2010 (IICWG)		ard is mandat-ory
			Application State Vec-tor Processing Specification, SCIP-233.401 rev.1.2:2012 (IICWG)		For CCEB in-teroperability the SCIP stand-ard is mandat-ory
			Point-to-Point Cryptographic Verification w/ Signature, SCIP-233.444 rev.1.0:2011 (IICWG)		For CCEB in-teroperability the SCIP stand-ard is mandat-ory
			MERCATOR Point-to-Point Cryptographic Verification w/ Signature Spe-cification, SCIP-233.445 rev.1.0:2012 (IICWG)		For CCEB in-teroperability the SCIP stand-ard is mandat-ory
			Secure MELP(e) Voice, SCIP-233.501 rev.1.1:2012 (IICWG)		For CCEB in-teroperability the SCIP stand-ard is mandat-ory
			Secure Almost Full Band-width (AFB) Data,		For CCEB in-teroperability the SCIP stand-

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			SCIP-233.518 rev.1.0:2010 (IICWG)		ard is mandat-ory
			Secure Full Bandwidth (FB) Data, SCIP-233.519 rev.1.0:2010 (IICWG)		For CCEB in-teroperability the SCIP stand-ard is mandat-ory
			Secure Packet Data, SCIP-233.531 rev.1.0:2010 (IICWG)		For CCEB in-teroperability the SCIP stand-ard is mandat-ory
			Secure Mes-saging Pro-cessing Spe-cification, SCIP-233.547 rev.1.0:2012 (IICWG)		For CCEB in-teroperability the SCIP stand-ard is mandat-ory
			Galois/ Counter Mode (GCM) Data Integrity Spe-cification, SCIP-233.562 rev.0.1:2012 (IICWG)		For CCEB in-teroperability the SCIP stand-ard is mandat-ory
			MERCATOR Encryption Al-gorithm Spe-cification, SCIP-233.604 rev.1.0:2012 (IICWG)		For CCEB in-teroperability the SCIP stand-ard is mandat-ory
			Username Token Pro-		Used in Profile: CES

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			file, v1.1:2004 (OASIS)		
			X.509 Certificate Token Profile, v1.1:2004 (OASIS)		Used in Profiles: CES, tactESB
			Kerberos Token Profile 1.1:2006 (OASIS)		Used in Profile: CES
		SAML Token Profile 1.1:2006 (OASIS)			Used in Profiles: CES, FMN, tactESB
			SOAP Messages with Attachments (SwA) Profile 1.1:2006 (OASIS)		Used in Profile: CES
		WS-Security Utility 1.0:2001 (OASIS)			Used in Profile: CES
		WS-Trust 1.4:2007 (OASIS)			Changed to mandatory with Approved Errata, dated 25 April 2012. Used in Profiles: AMN, CES, FMN, tactESB
		Basic Security Profile Version 1.1:2010 (WS-I)			Used in Profiles: AMN, FMN, tactESB

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Military Mes-saging (STANAG 4406 Ed.2:2006)		Use of PCT with-in STANAG 4406 is fading	Used for Formal Messaging. STANAG 4406 contains the upper layer protocol profile down to the requested Transport Service. For CCEB interoperability the mandat-ory standard is ACP123A .
				X.400:1993 deleted for informal messaging, as no con-crete re-quirement from MM-HSWG	
			MMHS Head-er Fields for use in SMTP (IETF RFC 6477:2012)		Used in Profile: FMN
		Nato Sec-ondary Im-agery Format (NSIF), STANAG 4545 ed.2:2013			NSIF estab-lishes the format for ex-change of elec-tronic second-ary imagery. Used in Pro-files: AMN, FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Informal Messaging Services				
		SMTP (IETF RFCs 1870:1995, 1985:1996, 2034:1996, 2821:2001, 2920:2000, 3207:2002, 3461:2003 updated by 3798:2004, 3885:2004, 4954:2007, 5321:2008, 5322:2008)	eSMTP (IETF RFC 3030:2000)		Used for inter-personal messaging (email) Used in Profiles: AMN, FMN
		POP3 (IETF RFC 1939:1996 updated by 1957:1996, 2449:1998)			For CCEB interoperability this standard is not applicable
		IMAP4 (IETF RFC 3501:2003 updated by 4466:2006, 4469:2006, 4551:2006, 5032:2007, 5182:2008, 5738:2010)			For CCEB interoperability this standard is not applicable
	Application Sharing Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Data Proto- cols for Multi- media Confer- encing (ITU- T T.120:2007, T.128:2008)			
	Fax Services				
		Fax G.3, ITU- T T.4:2003			
		Fax Transmis- sion, ITU-T T.30:2005	Fax Relay for IP Net- works, ITU-T T.38:2010		
		TDF (STANAG 5000 ed.3:2006)			For CCEB in- teroperability the SCIP stand- ard is mandat- ory
	Unified Mes- saging Ser- vices				
	Whiteboard- ing Services				
	Presence Ser- vices				
	Document Sharing Ser- vices				
		ITU Multi- point still im- age and An- notation Con- ference Pro- tocol Spec (ITU-T T.120:2007), T.126:2007			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		(Reference to T.122 - T.125)			
		HTTP Ex-tensions for Web Distrib-uted Author-ing and Ver-sioning (Web-DAV) (IETF RFC 4918:2007)			
Enterprise Sup-port IA Services					
	Enterprise Support Guard Ser-vices				
		XML Confid-entiality Label Syntax (FFI 00961:2010)			Used in Pro-files: AMN, FMN, tactESB
		Binding of Metadata to Data objects (FFI 00962:2010)			Used in Pro-files: AMN, FMN, tactESB
		NATO XML Labelling ver-sion 1.0 (Ref:-NC3A Tech-nical Note 1455 "NATO Profile for the 'Binding of Metadata to Data Ob-jects' - ver-sion 1.0"; and			Used in Pro-files: AMN, CES, FMN, tactESB

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		- NC3A Technical Note 1456, "NATO Profile for the 'XML Confidentiality Label Syntax' - version 1.0".)			
		ACP 145(A) - Interim Implementation Guide for ACP 123/ STANAG 4406 Messaging Services Between Nations - dated September 2008			Provides gateway between ACP 123A messaging services. For CCEB interoperability this standard is mandatory.
			Binding of Metadata to Data Objects (NC3A TN 1455)		<i>Used in Profiles: AMN, CES</i>
	Text-based Collaboration Guard Services				
	Audio-based Collaboration Guard Services				
	Informal Messaging Guard Services				
	Video-based Collaboration				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Guard Services				
	Formal Messaging Guard Services				
Geospatial Services					
		Additional military Layers for digital geospatial data products (AML), STANAG 7170 ed.2:2010			STANAG 7170 is the reference to the NATO Maritime Concepts standard and describes the product Additional Military Layers. This standard includes the Features, Attributes and enumerations specified by AML, but not covered by the IHO S-57 version 3.1.2 (June 2009) Object Catalogue. Once all required maritime definitions are included in DFDD/NG-FCD, reference to STANAG 7170 may be unnecessary.
		DIGEST V2.0 and DIGEST V2.1,			IGEOWG is in the process of imple-

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		<p>STANAG 7074 ed.2:1998, AgeoP-3 (VMaps, USRP, ASRP)</p>			<p>menting DFDD as a STANAG called the NG-FCD (NATO Geospatial Feature Concept Dictionary). The IGEOGW will regulate any proposals that DGIWG may put forward with respect to DIGEST replacements.</p> <p>For CCEB interoperability the mandatory standard is DGIWG Feature Data Directory (DFDD) 2006 and DIGEST v2.1 is fading</p>
		<p>DTED (STANAG 3809 ed.4:2006)</p>			<p>Digital Terrain Elevation Exchange Format STANAG 3809 is based on US MIL-PRF-89020B, Digital Terrain Elevation Data (DTED), dated 23 May 2000. The USA, custodians of</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					<p>DTED, are working with the DGIWG to define and develop appropriate replacement standards for the exchange format in order to address new and emerging elevation requirements.</p> <p>Used in Profiles: AMN, FMN</p>
		<p>Spatial Schema ISO 19107:2003, DGI-WG/TSMAD profiles of ISO 19107</p>			<p>ISO 19107 provides conceptual schemas for describing and manipulating the spatial characteristics of geographic features.</p> <p>The DGI-WG/TSMAD profiles are intended to define sub-schemas of ISO 19107 to be used for defining data interchange formats.</p> <p>For CCEB interoperability</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					this standard is emerging
		Methodology for feature cataloguing ISO 19110:2005			<p>ISO 19110 defines the methodology for cataloguing feature types and specifies how the classification of feature types is organized into a feature catalogue and presented to the user of a set of geographic data.</p> <p>For CCEB interoperability this standard is emerging</p>
		Spatial Referencing by geographic identifiers ISO 19112:2003			<p>ISO 19112 defines the conceptual schema for spatial references based on geographic identifiers. This standard enables gazetteers to be constructed in a consistent manner.</p> <p>For CCEB interoperability this standard is emerging</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Simple Feature Access, ISO 19125-1:2004 and ISO 19125-2:2004			<p>ISO 19125-1 establishes a common architecture for geographic information (simple feature profile of ISO 19107) and defines terms to use within the architecture. It also standardizes names and geometric definitions for Types for Geometry.</p> <p>ISO 19125-2 specifies and SQL schema that support storage, retrieval, query and update of simple geospatial feature collections via the SQL Call Level Interface (SQL/CLI) and establishes and architecture for the implementation of feature tables.</p> <p>For CCEB interoperability</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					this standard is emerging
		Geographical Tagged Image Format (GeoTIFF) v.1.8.2 (OS-GEO:2000)			<i>Used in Profiles: AMN, FMN</i>
		Compressed ARC Digitized Raster Graphics (CADRG), STANAG 7098 ed.2:2004)			<i>Used in Profiles: AMN, FMN</i>
		GML 3.2.1 (OGC:2007)		GML v3.1 (ISO 19136:2007)	<p>This Open-GIS Consortium recommendation standard may be used as the transfer format between the FA providing the published operational data (e.g. COP) and the Core Map Application Server.</p> <p>For CCEB interoperability GML 3.1 is emerging</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					Used in Profiles: AMN, FMN
		GML Simple Feature Profile v2.0 (OGC 10-100r2:2010)			<i>Used in Profiles: AMN, FMN</i>
		OpenGIS City Geography Markup Language (CityGML) v1.0 (OGC:2008)			Added in NISP v.6 through RFCP 5-46.
			Filter Encoding v2.0 (OGC 09-026r1:2010)		<i>Used in Profiles: AMN (v1.1), FMN (v1.1)</i>
			Geospatial Data Abstraction Library (GDAL:2013)	ESRI Shapefile Specification (ESRI:2008)	<i>Used in Profiles: AMN, FMN</i>
			Open Esri GeoServices REST specification, v.1.0:2010		Used in Profile: FMN
			OpenGIS Web Processing Service (WPS), v.1.0.0:2007 (OGC)		Used in Profile: FMN
		DLMS/DFAD1, Mil-PRF-89005:1994 (NGA)			DLMS/DFAD1 must be used until DIGEST/VMAP 1

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					<p>covers the whole world.</p> <p>For CCEB interoperability this standard is not applicable</p>
		<p>World Geodetic System (WGS) 84 (NIMA TR 8350.2:2004)</p>			<p>WGS specifies the set of parameters that define mathematically the shape of the earth</p> <p>Used in Profiles: AMN, FMN</p>
		<p>Geographic Information - Metadata - ISO 19115:2003</p>			<p>This provides the most comprehensive metadata specification for digital geographic data. This shall be used for the geo metadata which forms the foundation of the Core Geo Catalogue. It is likely that a NATO profile of this standard will have to be produced based on the DGIWG profile.</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					For CCEB interoperability this standard is emerging Used in Profiles: AMN, FMN, tactESB
		NATO Geospatial Metadata Profile (STANAG 2586 ed.1:2013)			Used in profile: FMN
		WECDIS (STANAG 4564 ed.2:2007)			Standard for Warship Electronic Chart Display and Information Systems.
		SEDRIS (ISO/IEC 18023-1:2006)			Environmental data representation and interchange specification
		EDCS (ISO/IEC 18025:2005)			Environmental data coding specification
		SRM (ISO/IEC 18026:2009)			Spatial reference model
		Geodetic Projections, STANAG 2211 ed.6:2001			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Keyhole-Markup Language (KML) v.2.2:2008 (OGC 07-147r2)			Used in Profiles: AMN, FMN
	Geospatial Information Provision Services				
			OpenGIS Web Map Tile Service Implementation Standard (WMTS 1.0.0) (OGC 07-057r7)		Used in Profiles: AMN, FMN
	Geospatial Web Map Services				
	Geospatial Web Feature Services				
	Geospatial Web Coverage Services				
	Geospatial Web Map Tile Services				
	Geospatial Catalog Services				
	Geospatial Data Management Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Geospatial Vector Data Services				
	Geospatial Raster Data Services				
	Geospatial Data Synchronization Services				
	Geospatial Processing Services				
	Terrain Analysis Services				
	Geospatial Coordinate Services				
			Coordinate Transformation Services (OGC 01-009:2001)		Used in Profile: FMN
	Geospatial Network Analysis Services				
	Geospatial Route Services				
Enterprise Support SMC Services					
	Application Store Services				
	Configura-tion Manage-				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	ment Database Services				
Information Management Services					
			AVDL		
			EDXL-DE		
	Document Management Services				
	Workflow Services				
	Content Management Services				
	Enterprise Search Services				
		Dublin Core Metadata Element Set (DCES) (ISO 15836:2009)			<i>Used in Profiles: AMN, FMN</i>
		NATO TIDE Information Discovery (Request-Response), v.2.3.0:2009 (ACT)			Part of TIDE specification at ACT. For CCEB interoperability this standard is not applicable. Used in Profiles: AMN, FMN, tactESB
Infrastructure Services					

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		X Window X11R7.5:2009, (X.Org) (see UI Svc)			
			DCE DFS v1.1:1997 (The Open Group)		
			RMI-IIOP 1.5.0:2005 (SUN)		
				MS-DCOM v.12.0:2010 (MS)	As part of MS Windows 2000 Interfaces; DCOM only in local environment, not for outside.
		FTP (IETF STD 9:1985, IETF RFC 0959:1985 updated by RFC 2228:1997, 2640:1999, 2773:2000, 3659:2007)			
		RTP (IETF RFC 3550:2003)	SRTP (IETF RFC 3711:2004)		
			RTCP Attributes in SDP (IETF RFC 3605:2003)		
		Telnet (IETF STD 8:1983, IETF RFC			Used in Profile: FMN (RTP)

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		0854:1983 up- dated by RFC 5198:2008, 0855:1983)			
		Network News Transfer Pro- tocol NNTP (IETF RFC 3977:2006)			
		Network Time Protocol (NTP)(RFC 5905:2010)			Used in Pro- files: AMN, FMN, tactESB
		Simple Net- work Time Protocol (SNTP)(RFC 2030:1996)			
				MPEG-1 (ISO/IEC 11172:1996)	
		MPEG-2 (ISO/ IEC 13818:2000)			
		MPEG-4 (ISO/ IEC 14496:2004)			Encoding standard for video conferen- cing
		UDF 1.0.1 (ISO/IEC 13346:1995)	UDF 2.0.1		UDF (Universal Disk Format)
		Pulse Code Modulation (PCM) (ISO/ IEC 11172-3:1993,			PCM used for audio in ISDN Systems

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		ITU-T G.711:1988)			
		7 kbit au- dio-coding in 64 kbit/s (ITU- T G.722:1993)			
		Differential PCM (ITU-T G.726:1990)			
		CS-ACELP (ITU-T G.729:2012)			Used in Profile: FMN
		Internet Low Bitrate Cod- ing (iLBC) (IETF RFC 3951:2004)			Used in Profile: FMN (G.729)
		H.263 (ITU-T H.263:2005)			ITU-T H.263 (Video coding for low bit rate communic- ation); Used in Pro- files: AMN, FMN
		H.264 (ITU-T H.264:2012)			ITU-T H.264 (The Advanced Video Coding Standard)
				Delta- Modula- tion DM, EURO- COM D/0	
		GSM- Modulation (GSM 06.10,			Used for mobile phones

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		GSM 06.20 v.8.1.1:1999)			
				Linear Predictive Coding-10 (STANAG 4198 ed.1:1984)	
		Code Excited Linear Prediction coding (CELP) (FS 1016:1991)			CELP is used military aircraft voice communications in narrow band UHF networks. CELP has higher throughput than LPC-10, but a lower range.
		Mixed Excitation Linear Predictive coding (MELPe) (STANAG 4591 ed.1:2008)			MELPe is used for HF voice communications in narrow band systems.
				STANAG 4421 deleted as it is cancelled by NATO	
		Parameters and Coding Standards for 800 bps. Digital Speech Encoder/Decoder (STANAG			For CCEB interoperability this standard is not applicable

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		4479 ed.1:2002)			
		BIIF (ISO 12087-5:1998)			
		NSILI (STANAG 4559 ed.3:2010)			NSILI provides interoperability between NATO nations reconnaissance databases and product libraries Used in Profiles: AMN, FMN
		NIIRS (STANAG 7194 ed.1:2009)	NIIRS - AIntP-7 (STANAG 7194 ed.2 (Draft))		NIIRS provides evaluation of imagery quality and use of a consistent measure for such evaluations
		NADSI (STANAG 4575 ed.3:2009)	NADSI (STANAG 4575 ed.4 (RD))		NADSI defines an interface for advanced digital storage systems.
		GMTIF (STANAG 4607 ed.3:2010)			GMTIF defines a ground moving target indicator format. Used in Profiles: AMN, FMN
		DMIS (STANAG			DMIS defines a digital motion

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		4609 ed.3:2009)			imagery stand-ard. For CCEB in-teroperability this standard is not applicable. Used in Pro-files: AMN, FMN
		NPIF (STANAG 7023 ed.4:2009)			NPIF estab-lishes a stand-ard data format and a stand-ard transport ar-chitecture for the transfer of reconnais-sance and sur-veillance im-agery and asso-ciated auxiliary
		AR-TRI (STANAG 7024 ed.2:2001)			AR-TRI estab-lishes the phys-ical format for the exchange of magnetic tape cartridges
		Exchange of Imagery (STANAG 3764 ed.6:2008)			
		Implementing JPEG 2000 in NITFS/BIIF/ NSIF (ISO			This profile defines the lim-its of the inter-national stand-ard that can

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		10918-4:1999)			be used within NITF 2.1.
Infrastructure IA Services					
			Allied Naval and Maritime Air Communication Instructions (ACP 176 NATO Supp 1:1967)		Contains configuration settings across different crypto devices. Used in Profile: FMN
			S/MIME (IETF RFC 5751:2010)		
	Identity Management Services				
			Common Biometric Exchange Formats Framework (CBEFF)		
		NPKI Certificate Policy (CertP), AC/322D(2004)	0024REV2		Used in Profile: FMN
		Machine readable passport (ISO/IEC 7501-1:2008)			Used in Profile: FMN
			DOD EBTS 8.1 (FBI IAFIS-DOC-01078-8.1: 2008)		<i>Used in Profile: AMN</i>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Credential Management Services				
	Attribute Management Services				
	Privilege Management Services				
	Digital Policy Management Services				
	IA Audit Management Services				
	Crypto Key Management Services				
	IA Configuration Management Services				
	IA Metadata Management Services				
	Infrastructure Guard Services				
				NC3 Re-pository	Common repository for standard data elements and their related tool for the NATO Corporate Data Model for Data Adminis-

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					<p>tration. See also XML.</p> <p>As this is currently not a formal standard, this entry is under further consideration within the C3B. Current STANAG cancelled in 2013.</p> <p>For CCEB interoperability this standard is partially applicable</p> <p>Used in Profile: AMN</p>
	Directory Guard Services				
	File Transfer Guard Services				
	Malware Detection Services				
	Intrusion Detection Services				
	Network Access Control Services				
Infrastructure SMC Services					

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			Open Services Infrastructure (OpenSiS) v.1.9.5.6, OpenSIS		
	Infrastruc-ture Monitor-ing Services				
	Infrastruc-ture Provi-sioning Ser-vices				
	Infrastruc-ture Metering Services				
	Infrastruc-ture Logging Services				
Infrastructure Networking Services					
			Distributed Computing Environment (DCE) v1.1:1997 (OSF)		
			ONC RPC v.2 (IETF RFC 1831:1995)		
			DCE RPC v1.1:1997 (The Open Group)		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			Remote Procedure Call (MS-RPC:2003) (MS)		As part of MS Windows 2000 Interfaces
			X/Open Network File System (XNFS) v.3W:1998 (The Open Group)		Includes RFC 1094:1989 (NFS 89) and RFC 1813:1995 (NFS95)
			Server Message Block (MS-SMB) v20100711:2010 (MS)		As part of MS Windows 2000
			Default Address Selection for Internet Protocol Version 6 (IPv6) (RFC 6724:2012)		used in Profile: FMN
			VDSL2		VDSL2 is the next generation of Super Broadband DSL. Ericsson has demonstrated 500-Mbits/s transmission rates over copper cabling by using new crosstalk cancellation or vectorized VDSL2 based modems.

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					The data rate is over 20 times faster than the fastest ADSL2 services currently on offer in most countries.
	Distributed Time Services				
			DCE DTS v1.1:1995 (The Open Group)		DCE DTS uses TPI (Time Provider Interface) to access other distributed time services (such as NTP as mentioned under Comms Service).
		Working with Time Zones (W3C Note-timezone:2005)			Used in Profile: FMN
	Remote Access Services				
	Domain Name Services				
			End-to-End Network – Internet Protocol Framework (NETIP), STANAG 4731 (Draft)		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		DNS (IETF STD 13:1987, RFC 1034:1987 and RFC 1035:1987 updated by RFC 1101:1989, 1183:1990, updated by 5395:2008; 1706:1994, 1876:1996, 1982:1996, 1995:1996, 1996:1996, 2136:1997, 2181:1997, updated by 5452:2009; 2308:1998, 2845:2000, 2931:2000, 3007:2000, 3226:2004, 3425:2002, 3597:2004, 3645:2003, 4033:2005, 4034:2005, 4035:2005, 4343:2006, 4470:2006, 4592:2006)	DNSSEC (IETF RFC 4025 - 4033:2005)		Bind version 9 or later should be used. Used in Profiles: AMN, FMN, tactESB. In tactESB only used, if enough bandwidth available
			mDNS (IETF RFC 6762)		Part of TIDE specification at ACT. For CCEB interoperability this

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					standard is not applicable.
			IPSec Material in DNS (RFC 4025:2005)		
			DNS Configuration Options for DHCPv6 (RFC 3646:2003)		
			NIS-Options for DHCPv6 (RFC 3898:2004)		
		Dynamic Host Configuration Protocol, DHCP (RFC 2131:1997 updated by RFC 3396:2002, 4361:2006, 5494:2009)			
	Host Configuration Services				
			DHCP for IPv6 (RFC 3315:2003 updated by 4361:2006, 5494:2009)	DHCP Options and BOOTP Vendor Extensions not to be used in new systems	
			IPv6 Prefix Options for DHCPv6		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			(RFC 3633:2003)		
	Data Transfer Services				
			FTP Extensions for IPv6 and NATs (IETF RFC 2428:1998)		
	Network Load Balancing Services				
	Printing and Scanning Services				
Infrastructure Processing Services					
		Open Visualisation Format (OVF) v1.1.0 (ISO/IEC 17203:2011)	Open Visualisation Format (OVF) v.2.0.1 (DMTF DSP0243:2013)		Used in Profile: FMN
		X Window System 11 R7.5:2009		X Window System 11 R5	The R6.6 release addresses a portion of the backlog of bug reports since Release 6.5.1 patch 1, along with additional fixes from the Xfree86 community. R5 should not be used for future systems.

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					For CCEB interoperability this standard is not applicable
				US DoD HCI Style Guide Version 4.0 Dec 2000 not for use in new systems	For CCEB interoperability this standard is not applicable
				UK Army CIS Style Guide V 2.0 not for use in new systems	For CCEB interoperability this standard is not applicable
	Virtualized Processing Services				
	Operating System Services				
				Win 32 APIs	As part of MS Windows 2000 Interfaces For CCEB interoperability this standard is not applicable
		CDE 2.1:1997		CDE 1.0	Common Desktop Environment is the UNIX Windows Desktop equivalent.

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					For CCEB interoperability this standard is not applicable
		Motif/CDE Style Guide Rev 2.1:1997		Motif Style Guide Rev 1.2	Toolkit specific style guides For CCEB interoperability this standard is not applicable
				MS Windows Interface Guidelines for Software Design	Toolkit specific style guides. As part of MS Windows 2000 Interfaces. For CCEB interoperability this standard is not applicable
		Motif 2.1:1997		Motif 1.2	For CCEB interoperability this standard is not applicable
Infrastructure Storage Services					
		PDF/A-1 (ISO 19005-1:2005)			Used in Profile: FMN
		PDF/A-2 (ISO 19005-2:2011)			Electronic document file format for long-term preservation. Used in Profile: FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		PDF/A-3 (ISO 19005-3:2012)			<p>Portable document presentation format, realised in Adobe product version 7. Used in Minerva system at NATO HQ</p> <p>For CCEB interoperability the primary standard is Adobe Postscript (level I and II) /Encapsulated Postscript (EPS) , and the secondary standard is Adobe PDF</p> <p>Used in Profiles: AMN, FMN</p>
	Block-Level Storage Services				
	File System Storage Services				
		Compact Disc File System (CDFS) (ISO 9660:1988)			For physical media distribution (CD)
	Blob Storage Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Relational Database Storage Services				
		SQL 3 (ISO/IEC 9075(-1 to -14):2008)		Full Level and ISO/IEC 9075:1999 canceled, new Version ISO/IEC 9075(-1 to -14):2008, Parts 1, 2 and 11 encompass the minimum requirements of the language. Other parts define extensions.	Used in Profiles: AMN, FMN
		ODMG 3.0:2000 (ODMG)			
		ODBC 3.8 (MS)			
		JAVA DBC version 4.1:2006 (JDBC)		JDBC separated from ODBC	
		Distributed RDA (DRDA),			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		v.5 (The Open Group)			
		SQL CLI (ISO/IEC 9075-3:2008)			
				C2 Information Exchange Data Model (C2IEDM) and Data Exchange Mechanism (DEM)	<i>Used in Profiles: AMN, FMN</i>
		DEM Data Replication Mechanism from MIP baseline 3:2009	DEM Data Replication Mechanism from MIP baseline 4		Used in Profiles: AMN, FMN
				NATO Corporate Data Model v2 (AD-atP-32)	For CCEB interoperability this standard is partially applicable
			ASTERIX, ed.1 (AD-atP-35:2010)		This profile is based on ADatP-35 and a corresponding series of EUROCONTROL specifications For CCEB interoperability this profile is only applicable

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					for NATO lead operations.
		Rules for application schema ISO 19109:2005			<p>ISO 19109 defines rules for creating and documenting application schemas, including the principles for the definition of features. Required for Geo to ensure consistency of use in the definition and use of the geographic features.</p> <p>For CCEB interoperability this standard is emerging</p>
		Joint C3 Information Exchange Data Model (MIP BL 3.1.4: 2012; MIP JC3IEDM 3.1.4:2012)	MIP Baseline 4	C2IEDM replaced by JC3IEDM	<p>C2IEDM replaced by JC3IEDM.</p> <p>MIP BL 3.1.4 used instead of STANAG 5525ed1 to reflect the current version approved by the MIP Community.</p>

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					Used in Profiles: AMN, FMN
			MIP Information Model, Standard Data Elements (SDE) (STANAG 5526ed1 (Study))		Used in Profiles: AMN, FMN
	Non-relational Structured Storage Services				
	Directory Storage Services				
		Common Directory Services and Procedures (ACP 133D:2009)		ACP 133B	Contains a common directoryschema.
		Common Directory Services and Procedures Supplement (ACP 133 Suppl.1:2009)			
		LDAP v3 (NATO LDAP Profile)			LDAP is an IETF protocol and close to a functional subset of DAP. Many Web-browsers can

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					act as LDAP clients, which is highly desirable. Used in Profiles: AMN, CES, FMN, tactESB
			LDAP: String Representation of Distinguished Names:2006 (IETF)		Used in Profile: CES
		LDIF (IETF RFC 2849:2000)			LDIF defines a flexible and almost universally accepted means of exchanging directory information via flat files.
				DSP (ITU-T X.500:2008)	DSP defines X.500 server to server communication, including chaining. For CCEB interoperability this standard is not applicable
				DSIP (ITU-T X.500:2008)	DISP defines X.500 based information shad-

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					owing/replica- tion. For CCEB in- teroperability this standard is not applicable
				DOP (ITU-T X.500:2008)	Contains opera- tional manage- ment. For CCEB in- teroperability this standard is not applicable
			DSML v2.0:2002, OASIS		DSML provides a Directory Access via a Web interface
SOA Platform Services					
		ebRIM v3.0:2005 (OASIS)			ebXML Re- gistry Informa- tion Model Used in Profile: AMN, FMN
			AtomPub (IETF RFC 5023:2007)		Used in Profile: FMN
			Web Ser- vices Business Process Ex- ecution Lan- guage (WS- BPEL) v.2:2007, OASIS		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			Business Process Model and Notation (BPMN) v.2.0:2010		
		WS-I Web Service Basic Profile, v1.1:2nd ed. 2006	WS-I Web Service Basic Profile, v1.2:3rd ed. 2007		For CCEB interoperability this profile is mandatory. Used in Profiles: AMN (v1.1), CES (v1.0), tactESB (v1.1)
			WS-I Web Service Basic Profile, v2.0 2010		
		Simple Object Access Protocol v1.1 (SOAP), W3C	Simple Object Access Protocol v1.2 (SOAP), W3C		Could be used in support of the Geo Web Services. Used in Profiles: AMN (v1.1), CES (v1.1), FMN (v1.1), tactESB (v1.2)
			WS-I Simple SOAP Binding Profile v1.0:2004		For CCEB interoperability this profile is mandatory. Used in Profile: tactESB
			WS-I Attachments Profile		For CCEB interoperability

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			v1.0:2nd ed. 2006		this profile is mandatory. Used in Profile: CES
			WS-Addressing v1.0 - Core:2010		Used in Profiles: AMN, CES, FMN, tactESB
		WS-Addressing 1.0 - Metadata:2007			Used in Profile: AMN
		WS-Addressing 1.0 - SOAP Bindings:2006			Used in Profile: AMN
			WS-Notification v1.3:2006		Used in Profiles: CES, FMN, tactESB
			WS-BrokeredNotification v1.3:2006		Used in Profiles: CES, FMN, tactESB
			WS-Topics v1.3:2006		Used in Profiles: CES, FMN, tactESB
			Representational State Transfer (REST):2002, (ACM)		<i>Used in Profiles: AMN, FMN</i>
Mediation Services					
			Services to Forward		Used in Profile: FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			Friendly Force Information to Weapon Delivery Assets (STANAG 5528 ed.1 (Study))		
		Enhanced Security Services (ESS) for S/MIME, STANAG 4631 Ed.1:2008			STANAG 4631 contains an additional S/MIME profile for MMMHS (in addition to PCT) For CCEB interoperability the mandatory standard is ACP123A .
				Interoperability of telebriefing systems (STANAG 5059) deleted	
				Interoperability standards for telebriefing systems (STANAG 4339) deleted	
		XML 1.0 5th ed:2008, W3C	XML 1.1 2nd ed:2006, W3C		Where semantic tags are

SUBAREA / SERVICE CATEGORY	/ CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
					required, the NC3 Repository serves as an XML registry (see Data Management). Used in Profiles: CES, FMN, tactESB
		XLink 1.0:2001, W3C	XLink 1.1:2012, W3C		XLink is used to point to resources from XML documents.
		XPointer 1.0:2001, W3C			XPointer is used to identify XML fragment inside any given XML documents.
			Relax NG (ISO/IEC 19757-2:2008)		Relax NG may be a replacement for XML schema languages. Used in Profile: CES
		XML Base:2001, W3C			
		XMI ed.1:2001 (ISO/IEC 19503:2005)			XMI can be used for any metadata whose metamodel can be expressed in Meta-Object Facility (MOF).

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		XML In-foset:2001, W3C			
		XSL Association:1999, W3C			
		Namespaces in XML (xml-names-19990114:1999) W3C			Used in Profiles: AMN, CES, tactESB
		Extensible Stylesheet Language Transformation (XSLT) Version 2.0 (W3C:2007)			Used in Profiles: AMN, CES, FMN, tactESB
		Extensible Stylesheet Language (XSL) 1.0:2001	Extensible Stylesheet Language (XSL) 1.1:2006		
		XML Schema, Part 1-2:2004			Used in Profiles: AMN, CES, FMN, tactESB
			Efficient XML Interchange Format (EXI) v1.0		Efficient implementations of XML in the tactical environment
	Data Format Transformation Services				
			XQuery 1.0:2003, W3C		Used in Profile: CES

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		XML Path Language (XPath) v2.0:2003, W3C			For CCEB interoperability this profile is mandatory. Used in Profile: CES
	Protocol Transformation Services				
Composition Services					
		Unified Modeling Language (UML) v2.2:2009 (OMG)			For CCEB interoperability this standard is not applicable
	Transaction Services				
	Choreography Services				
			Web Service Choreography Interface (WSCI) v.1:2002		
	Orchestration Services				
Message-oriented Middleware Services					
		SOAP Message Security 1.1:2004 (OASIS)	SOAP Message Security 1.2:2001 (W3C)		Used in Profiles: CES, FMN, tactESB

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		WS-ReliableMes-saging v1.2:2009 (OASIS)			Used in Pro-files: CES, FMN, tactESB
		WS-Reliable Messaging 1.2			
Web Platform Services					
		HTTP v. 1.1 (IETF RFC 2616:1999 up-dated by TLS (RFC 2817:2000), URL (RFC 4248:2005, 4266:2005), URI (RFC 3986:2005)			Used in Pro-files: AMN, CES, FMN, tactESB
			Content-ID and Mes-sage-ID URLs (IETF RFC 2392:1998)		Used in Profile: CES
			HTTP State Change Mg-nt. (IETF RFC 2965:2000)		Used in Pro-files: CES, tact-ESB
		HTTPS (IETF RFC 2818:2000)			Used in Profile: CES
		Cascading Style Sheets (CSS) 2.1 (W3C css-lev2:2001)	Cascading Style Sheets (CSS) level 3		<i>Used in Pro-files: AMN, FMN, tactESB</i>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Wireless Markup Language (WML) 2.0:2001			WML to be used with Wireless Application Protocol (WAP) for constrained environments
	Web Hosting Services				
		Web-Services Security Profile (WSS), v1.0 (OASIS)			Used in Profiles: AMN, FMN (v1.1), tactESB
		WS-Security Policy, v1.3:2009 (OASIS)			<p>Changed to mandatory with Approved Errata 01, dated 25 April 2012.</p> <p>Used in Profiles: CES, FMN, tactESB</p>
		Security Assertion Markup Language, SAML v2.0 (OASIS)			<p>For CCEB interoperability the Security Assertion Markup Language (SAML) v1.1 is mandatory and SAML 2.0 is emerging</p> <p>Used in Profiles: CES (v2.0), FMN, tactESB</p>
		XKMS 2.0 (W3C):2005			Used in Profiles: AMN, tactESB

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Public-key and attribute certificate frameworks, X.509 v3:2008 (ITU-T)			Used in Profiles: AMN, CES, FMN, tactESB
	Portlet Services				
		Java Portlet Specification v.1.0, JSR 168:2003 (JCP)	Java Portlet Specification v.2.0, JSR 286:2008 (JCP)		Used in Profile: FMN
		Remote Portlet Specification v1.0, WSRP 1.0:2003(OASIS)	Remote Portlet Specification v2.0, WSRP 2.0:2008(OASIS)		Used in Profile: FMN
	Web Application Acceleration Services				
	Web Caching Services				
SOA Platform SMC Services					
			WS-Management v1.0 (DMTF)		Used in Profiles: CES, FMN
			WS-Management CIM Binding Specification, v1.0.0 (DMTF)		Used in Profile: FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		CIM Schema v2.30.0 (DMTF)			Used in Profile: FMN
		CMDB Federation Specification v1.0.1 (DMTF)			Used in Profile: FMN
		ITIL (ISO/IEC 20000:2012)			Used in Profiles: AMN, FMN
		COBIT 5: A Business Framework for the Governance and Management of Enterprise IT (ISACA: 2012)			Used in Profiles: AMN, FMN
			enhanced Telecom Operations Map (eTOM, rel. 13:2012 (TM-Forum))		Used in Profile: FMN
			Configuration Management Database (CMDB) Federation Specification (DMTF DSP0252: 2009)		Used in Profile: AMN
		SNMPv3 Applications (IETF RFC 3413:2002)		SNMPv1 (IETF Std 15) not for	SNMPv3 is considered emerging because of current

SUBAREA / SERVICE CATEGORY	/ CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
				new systems	<p>lack of agreement on the concept of operations for distributed management</p> <p>For CCEB interoperability this standard is not applicable</p> <p>Used in Profiles: AMN, FMN, tactESB</p>
		<p>Message Processing and Dispatching for the SNMP (RFC 3412:2002 updated by 5590:2009)</p>			<p>For CCEB interoperability this standard is not applicable</p>
		<p>User-based Security Model (USM) for SNMPv3 (RFC 3414:2002 updated by 5590:2009)</p>			<p>For CCEB interoperability this standard is not applicable</p>
		<p>View-based Access Control Model (VACM) for the SNMP (RFC 3415:2002)</p>			<p>For CCEB interoperability this standard is not applicable</p>
		<p>Structure of Mgt Info</p>			<p>For CCEB interoperability</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		(IETF Std 16:1990, IETF RFC 1155:1990 and 1212:1991)			this standard is not applicable
		Architecture for SNMP Mgt Frameworks (RFC 3411:2002 updated by 5343:2008, 5590:2009)			For CCEB interoperability this standard is not applicable
		MIB II (IETF Std 17:1991, RFC 1213:1991 updated by 4293:2006, 4022:2005, 4113:2005)			For CCEB interoperability this standard is not applicable
			IPv6 MIB (IETF RFC 4293:2006)		For CCEB interoperability this standard is not applicable
			ICMPv6 MIB (IETF RFC 4293:2006)		For CCEB interoperability this standard is not applicable
			Multicast Group Membership Discovery MIB (IETF RFC 5519:2009)		For CCEB interoperability this standard is not applicable
			IPv6 MIB for TCP (IETF		For CCEB interoperability

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			RFC 4022:2005)		this standard is not applicable
			IPv6 MIB for UDP (IETF RFC 4113:2005)		For CCEB interoperability this standard is not applicable
		Host Resources MIB (IETF RFC 2790:2000)			For CCEB interoperability this standard is not applicable
		Defs of Mgt Objects for the Ethernet-like Interface types (IETF RFC 2666:1999, 3635:2003, 3638:2003)			For CCEB interoperability this standard is not applicable
		RMON MIB v. 1 (RFC 2819:2000)	RMON 2 MIB (RFC 4502:2006)		For CCEB interoperability this standard is not applicable
		OSPF MIB v.2 (RFC 4750:1996)			For CCEB interoperability this standard is not applicable
		RIP-2 MIB (RFC 1724:1994)			For CCEB interoperability this standard is not applicable
		802.1p (IEEE:2004)			IEEE 802.1p (Quality of Service)
		Performance objectives and procedures for provisioning			Used in Profile: FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		and maintenance of IP-based networks (ITU-T M.2301:2002)			
			Common Information Model (CIM) (DMTF:1999)	CMIS (ISO 9595:1998) deleted in NISP v.1	For CCEB interoperability this standard is not applicable
				CMIP (ISO/IEC 9596-1:1998) deleted in NISP v.1	Primarily used for Telecom Management
				CMIP PICS (ISO/IEC 9596-2:1993) deleted in NISP v.1	
				GDMO (ISO/IEC 10165-4:1996) deleted in NISP v.1	
	Service Discovery Services				
		Universal Description, Discovery and Integration (UDDI) 3.0, W3C			UDDI 3.0 provides a platform-independent way of describing- and discovering service.

SUBAREA / SERVICE CATEGORY	/ CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
					Used in Profiles: AMN, CES, FMN, tactESB (v2.03)
			UDDI API Spec v.2, OASIS:2002		Used in Profile: tactESB
		Electronic Business Extensible Markup Language (ebXML) ISO/TS 15000-1:2004, -2:2004, -3:2004, -4:2004, -5:2005			ebXML is a suite of specifications for standardizing XML based business messages to facilitate trading between organisation. Used in Profiles: AMN (v3.0), CES (v3.0), FMN
			ebXML Messaging Service v. 2.0:2002 (OASIS)		
		ebXML Registry Services and Protocols, v.3.0:2005 (OASIS)			Used in Profiles: AMN, FMN
			WS-Discovery v.1.1:2009, OASIS		<i>Used in Profile: tactESB</i>
			TIDE Service Discovery,		<i>Used in Profiles: AMN, FMN</i>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			v.2.2.0:2008 (ACT)		
			DNS-Based Service Discovery (DNS-SD):2013 (IETF)		Part of TIDE specification at ACT. For CCEB interoperability this standard is not applicable.
		NATO TIDE Service Discovery (Subscribe-Publish), v.2.2.0:2008 (ACT)			Part of TIDE specification at ACT. For CCEB interoperability this standard is not applicable. Used in Profiles: FMN, tactESB
		WSDL v1.1:2001, W3C	WSDL v2.0:2007 Part 1: Core Language, W3C		Used in Profiles: AMN, CES, FMN, tactESB
SOA Platform IA Services					
		Key Wrap Advanced Encryption Standard 128 (AES 128, NIST FIPS 197)	Key Wrap Advanced Encryption Standard 256 (AES 256, NIST FIPS 197)		PKI components and applications should utilise AES for key wrap functions. AES 256 should be utilized post 2008 for Root CA and Sub CA PKI components together

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					<p>with SHA-384 and 512. End entities can still utilize AES 128 together with SHA-256.</p> <p>For CCEB interoperability AES 128 is emerging.</p>
		IP ESP (RFC 4303:2005)			<p>Encapsulating Security Payload (ESP) may support integrity and authentication depending on the use of algorithms</p> <p>Used in Profile: tactESB</p>
			NINE IS-pec v1.0.3 (NATO)		
		<p>Digital Signature Algorithm 1024 (DSA-1024, NIST FIPS 186-2 with Change Notice 1, Oct 2001)</p>	<p>Elliptic Curve Digital Signature Algorithm (ECDSA 384, NIST FIPS 186-2 with Change Notice 1, Oct 2001)</p>	<p>Digital Signature Algorithm (original version) not for new systems</p>	<p>Authentication and integrity algorithm for End Entities as mandated by the interoperability protocol PCT for implementing digital signatures for a NATO Public Key Infrastructure (PKI) in the NATO mes-</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					<p>saging system. ECDSA 384 is planned for post 2008. Guidance is provided in AC/322-D(2004)0035.</p> <p>For CCEB interoperability the Digital Signature Algorithm (DSA) NIST FIPS 186-2 is mandatory. DSA FIPS 186-2 can be used in NATO for verification purposes only.</p>
		<p>RSA 2048 (PKCS#1 v2.1 RSA Cryptography Standard, RSA Laboratories, June 2002)</p>	<p>Elliptic Curve Digital Signature Algorithm (ECDSA 384, NIST FIPS 186-2 with Change Notice 1, Oct 2001)</p>		<p>Authentication and integrity algorithm for Sub CA and other PKI components (such as Key Recovery Agents) as mandated by the interoperability protocol PCT for implementing digital signatures for a NATO Public Key Infrastructure (PKI) in the NATO messaging system.</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					<p>ECDSA 384 is planned for post 2008. Guidance is provided in AC/322-D(2004)0035.</p> <p>For CCEB interoperability the Digital Signature Algorithm (DSA) NIST FIPS 186-2 is mandatory.</p>
		<p>Secure Hash Algorithm 256 (SHA-256, NIST FIPS 180-2 with Change Notice 1, Feb 2004)</p>	<p>Secure Hash Algorithm 384 (SHA-384, NIST FIPS 180-2 with Change Notice 1, Feb 2004)</p>	<p>Secure Hash Algorithm (SHA-1), NIST FIPS 180-1 replaced by SHA-256</p>	<p>Hash algorithm to accompany the DSA and RSA for use in NMS. SHA-384 is planned for post 2008. Guidance is provided in AC/322-D(2004)0035.</p> <p>For CCEB interoperability the standard is SHA-1, NIST FIPS 180-1 is mandatory. SHA-1 can be used in NATO for verification purposes only.</p>
		<p>XML Encryption Syntax and Pro-</p>			<p>Used in Profiles: CES, FMN, tactESB</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		cessing, W3C:2002			
		XML Signa- ture (W3C):2008			Used in Pro- files: FMN, tactESB
	Release Ser- vices				
	SOA Plat- form Guard Services				
		TLS v1.2 (IETF RFC 5246:2008)		SSL ex- cluded in NCSP v.6	Used as a trans- port layer secur- ity protocol. Used in Pro- files: AMN (v1.1), CES, FMN, tactESB
		SSH v.2 (IETF RFC 4250-4256:2006)			
	XML Guard Services				
	Web Guard Services				
	Security Token Ser- vices				
		WS-Policy v1.5:2007 (OASIS)			Used in Pro- files: AMN, CES, FMN, tactESB
		WS-Policy 1.5 - Guidelines (OASIS:2007)			Used in Pro- files: AMN, CES, FMN, tactESB

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		WS Policy 1.5 - Primer (OAWS-IS:2007)			Used in Profiles: AMN, CES, FMN, tactESB
		WS-Federation v1.2 (OASIS)			Used in Profiles: AMN (v.1.1), CES, FMN, tactESB
		Radius, IETF RFC 2865:2006 updated by RFC 2868:2000, 3575:2003, 5080:2007	Radius and IPv6, IETF RFC 3162:2001		
			Kerberos v.5, IETF RFC 1510:1993		<i>Used in Profiles: AMN, FMN</i>
			The Kerberos v5 Simple Authentication and Security Layer (SASL) Mechanism, IETF RFC 4752:2006		Used in Profile: CES
			Single sign on (SSO, the Open Group)		
			X.509 Public Key Infrastructure Certificate and CRL Profile (IETF RFC 5280:2008)		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Identification of Issuers (ISO 7812:2007)			Base profile consisting of parts 1 - 2.
	SOA Platform Privilege Management Services				
	Policy Decision Point (PDP) Services				
			NPKI Certificate Policy (CertP), AC/322D(2004)0024REV2		<i>Used in Profile: AMN, FMN</i>
		XACML v2.0:2008 (OASIS)	XACML v3.0:2010 (OASIS)		Used in Profiles: AMN, CES, tactESB
			DOD EBTS 1.2 (DoD: 2000)		<i>Used in Profile: AMN</i>
			DOD EBTS 2.0 (DoD: 2000)		<i>Used in Profile: AMN</i>
		Biometrics Data, Interchange, Watchlistung and Reporting (STANAG 4715 ed.1:2013)	Data Format for the Interchange of Fingerprint, Facial, and Scan Mark and Tattoo (SMT) Information (ANSI ITL-1: 2000)		<i>Used in Profiles: AMN (ITL-1), FMN (STANAG 4715)</i>
			Biometric data interchange formats --		<i>Used in Profile: AMN</i>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			Part 2 (ISO 19794-2:2007)		
			Biometric data interchange formats -- Part 5: Face Image Data (ISO 19794-5)		<i>Used in Profile: AMN</i>
			Biometric data interchange formats -- Part 6: Iris Image Data (ISO 19794-6)		<i>Used in Profile: AMN</i>
	Policy Enforcement Point (PEP) Services				
Information Platform Services					
	Information Discovery Services				
		SPARQL 1.1 Query Language:2012 (W3C)			Part of TIDE specification at ACT. Used in Profiles: AMN, FMN For CCEB interoperability this standard is not applicable.
		Web Ontology Language			Part of TIDE specification at

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		(OWL):2009, W3C			ACT. For CCEB interoperability this standard is not applicable. Used in Profiles: AMN, FMN
			OpenSearch 1.1, OpenSearch		Used in Profile: FMN
			ISAF Minimum Metadata Implementation Policy (NATO:2010)		<i>Used in profile: AMN</i>
			OWL-S		
	Information Annotation Services				
	Metadata Repository Services				
			NATO Metadata Registry and Repository (NMRR) (NC3A TN-1313:2008)		For CCEB interoperability this standard is not applicable.
			WS-Metadata Exchange:2010, W3C		Used in Profile: CES
		XML Encryption (W3C):2008			Used in Profiles: FMN, tactESB

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Information Access Ser-vices				
		Resource De-scription Framework (RDF):2004 (W3C)			Part of TIDE specification at ACT. For CCEB interoperability this standard is not applicable.
			Real Simple Syndication (RSS 2.0) (WS-I:2010)		<i>Used in Pro-files: AMN, FMN</i>
			GeoRSS (GeoRSS 1.0):2007 (OGC)		<i>Used in Pro-files: AMN, FMN</i>
		Atom Syndic-ation Format (IETF RFC 4287)			Used in Pro-files: AMN, FMN
		XHTML 1.0:2002 (W3C)	XForms 1.0:2003 (W3C)		XHTML is spe-cified in XML Used in Pro-files: AMN, FMN, tactESB
		SGML (ISO 8879:1986)			For high value complex docu-ments

3.3.2. Community Of Interest (COI) Services

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
COI-Enabling Services					
		CDIF (EIA/IS-106 to 118:1994)			CDIF (CASE (Computer Aided Software Engineering) Data Interchange Format). An EIA (Electronic Industry of America) standard for exchanging data between CASE Tools.
			Unified Profile for DoDAF and MODAF (UPDM v.2):2008 (OMG)		For CCEB interoperability this standard is not applicable.
		Codes for the representation of Currencies and Funds (ISO 4217:2008)			
		ECMA Script Language Specification (ECMA 262) ed.3:2009			Scripting required for enhanced Web pages For CCEB interoperability this standard is not applicable

SUBAREA / SERVICE CATEGORY	CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
		ECMA Script XML Specification (ECMA 357) ed.3:2009			This standard adds native XML datatypes to the ECMA Script language.
		Zip			Implementations of zip (e.g. Winzip) also includes gzip (RFC 1952:1996) and tar/compress
				7-bit Coded Character-set for Info Exchange (ASCII) (ISO/IEC 646:1991)	
				8-bit Single-Byte Coded Graphic Char Sets (ISO/IEC 8859-1-6,8-10:1999; 7:2003)	
		Universal Multiple Octet Coded Char Set (UCS) - Part 1 (ISO/IEC 10646:2003)			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		NATO Standard Bar Code Symbology (STANAG 4329 ed.4:2010)			STANAG 4329 is a cover STANAG of ISO 16388:1999 - Bar code symbology specifications - Code 39.
		Bar code symbology specification - Code 128 (ISO/IEC 15417:2007), Bar code print quality test specification - Linear symbols (ISO/IEC 15416:2000)			
		Representation of Dates and Times (ISO 8601:2004)			Used in Profiles: FMN, tactESB
		Date and Time Formats (W3C NOTE-date-time:1998)			Used in Profiles: AMN, FMN
		MIME (IETF RFC 2045:1996 updated by 2184:1997, 2231:1997, 5335:2008; 2046:1996 updated by	S/MIME ESS (IETF RFC 3850:2004, 3851:2004)		Base64 is included in RFC 2045:1996 Used in Profiles: CES, FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		3676:2004, 3798:2004, 5147:2008; 2047:1996 up- dated by 2184:1997, 2231:1997, 5338:2008; 2049:1996; 4288:2005; 4289:2005)			
			MIME Encap- sulation of Ag- gregate Doc- uments, such as HTML (MHTML):1999 (IETF)		Used in Profile: CES
Situational Awareness Ser- vices					
	Symbology Services				
		Vector Product Format (VPF) (DoD, Mil- Std. 2407:1996)			
		Vector Map (VMap) Level 1 (STANAG 7163 ed.1:2003)			
		NetCDF v1.0 OGC 10-090r3 (OGC:2011)			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		GeoPDF OGC 08-139r3 (OGC:2011)			
		Geospatial Symbols for Digital Displays (Geo-Sym) (NIMA:2000)			
		WebCGM (Web Computer Graphics Metafile), W3C REC 20011217, 2001		CGM (ISO/IEC 8632:1999) not for new systems	Primarily intended for vector-based images.
		SVG 1.2:2005 (W3C)			The preferred format to visualize maps in the Web browser.
		Mobile SVG Profiles: SVG Tiny and SVG Basic, W3C REC 20030114, 2003			SVG profiles for cellphones and PDAs
		Tagged Image File Format for image technology (TIFF) (ISO 12639:1998)			
			Vector Markup Language (VML), W3C Note		

SUBAREA / SERVICE CATEGORY	/ CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
			19980513, 1998 (W3C)		
			TIDE Transformational Baseline 3.0:2009 (ACT)		Used in Profiles: FMN, tactESB
		NVG - NATO Vector Graphics Protocol v.1.5:2010 (ACT)	NVG - NATO Vector Graphics Protocol v.2.0:2012 (ACT)		Part of TIDE specification at ACT. For CCEB interoperability this standard is not applicable. Used in Profiles: AMN, FMN, tactESB
		Controlled Imagery Base (CIB, STANAG 7099 ed.2:2004),			
		JPEG 2000 (ISO/IEC 15444-1:2004, ISO/IEC 15444-2:2004, ISO/IEC 15444-3:2007, including Amd 2:2003, ISO/IEC 15444-4:2004, ISO/IEC 15444-5:2003, ISO/IEC			JPEG 2000 is the standard used to store raster data (imagery, scanned maps, matrix data) and provides the ability to include spatial referencing information within the standard.

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		15444-6:2003,)			For CCEB interoperability ISO/IEC 15444-2 Cor. 3 is not applicable.
			JPEG LS (ISO/IEC 14495:2003)		Loss-less and near loss-less compression of continuous tone still images.
			Multiresolution seamless Image Database (MrSid Res. 2)		<i>Used in Profile: AMN, FMN</i>
			Enhanced Compressed Wavelet (ECW 3.3)		<i>Used in Profile: AMN</i>
			Raster product format (RPF) (NIMA):2010		<i>Used in Profile: AMN</i>
				GIF (version 89a) not for new systems	Graphics Interchange Format is intended for the on-line transmission and interchange of raster graphic data.
		PNG 1.0 (RFC 2083:1997)			Portable Network Graphics PNG is intended for the compressed storage of raster images. PNG

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					provides a patent-free replacement for GIF.
		Common Warfighting Symbology (Mil-Std 2525B)	Common Warfighting Symbology (Mil-Std 2525C)		For CCEB interoperability the mandatory standard is MIL-STD 2525B COMMON WARFIGHTING SYMBOLOGY and the emerging standard is MIL-STD 2525C Used in Profiles: AMN, FMN, tactESB
		Joint Symbology (APP-6(C)/STANAG 2019 ed.6:2011)			For CCEB interoperability this standard is not applicable. Used in Profiles: AMN, FMN, tactESB
		Telecommunications Symbology (STANAG 5042 ed1:1978)			
			Portrayal ISO/DIS 19117:2005		Currently in Draft. International Standard

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					specifies the interface to standard symbol sets, not the symbols themselves.
				Symbols on Land Maps, Aeronautical Charts and special Naval Charts (STANAG 3675 ed.2:2000)	For CCEB interoperability this standard is applicable and fading.
		IHO S-100, 2000		IHO S-57	
		Web Map Service (WMS) Implementation Specification v.1.3:2006 (OGC 06-042)			Used as a means of distributing compiled mapping data between applications. Used in Profiles: AMN, FMN, tactESB
		OpenGIS Styled Layer Descriptor Profile of the Web Map Service (SLD 1.1.0) (OGC 05-078r4)			<i>Used in Profiles: AMN, FMN, tactESB</i>
		Web Feature Service (WFS)	Web Feature Service (WFS) v.2.0:2009		Used as a means of distributing geo

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		v.1.1.0:2005 (OGC 04-094)	(OGC 09-025r1)		feature (vector) data between applications. For CCEB interoperability this standard is emerging Used in Profiles: AMN, FMN
		Web Coverage Service (WCS) v.2.0.1:2012 (OGC 09-110r4)			Used as a means of distributing geo coverages (raster) data between applications. For CCEB interoperability this standard is emerging Used in Profiles: AMN, FMN
			WCS Implementation Specification v1.1.2 (OGC 07-067r5:2007)	WCS Implementation Specification v1.0 (OGC 03-065r6:2003)	OGC 03-065r6 is declared as deprecated by OpenGIS. Used in Profiles: AMN (v1.1.1), FMN (v1.1.1)
			GML in JPEG 2000 for Geographic Imagery		This evolving OGC standard describes minimally required

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			(GMLJP2) v.1.0.0 (OGC 05-047r3:2006)		GML definition for georeferencing images and gives guidelines for augmenting that definition to address the additional encoding of metadata, features, annotations, styles, coordinate reference systems, and units of measure for data encoded in JP2K Used in Profile: FMN
			OGC GIS Web Terrain Service RFC v.05:2004		Used as a means to perform Web Service based Terrain analysis and communicate terrain data to clients
			Catalogue Service for the Web (CSW) v.2.0.2 (OGC)		Used as a means of discovering geo metadata. Used in Profiles: AMN, FMN, tactESB
		CSW-ebRIM Registry Service, Part 1: ebRIM pro-			<i>Used in Profiles: AMN, FMN</i>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		file for CSW v.1.0.1 (OGC 07-110r4:2009)			
			OGC - ISO 19115:2003/ ISO 19119:2005 Application Profile for CSW 2.0		Describes the organisation and implementation of Catalogue Services based on the ISO 19115 / ISO 19119 Application Profile
			Web Registry Service v.0.0.2:2001 (OGC Ref. 01-024r1)		Used as a means of publishing and finding geo services. As this standard is declared deprecated by OGC, the further inclusion of it in NISP is under consideration within the C3B.
				Computer Graphics Interface (CGI ISO/IEC 9636:1991)	For CCEB interoperability this standard is not applicable
		OpenGL v4.0:2010			For CCEB interoperability this standard is not applicable
	Track Management Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		JREAP, STANAG 5518 (RD)			
		ISO/IEC 8802-3:2000 (CSMA/CD)			
		ACP 190 (D)			
		ACP 190 (B) NATO Suppl 1A			<p>Spectrum Supportability Request/Comment is a two-way commitment between the (host)nation owing the system and each nation hosting the system:</p> <ul style="list-style-type: none"> - it is a prerequisite for the procuring nation/agency to operate SDEs in a host nation. - host nations granting support to a SDE is expected to assign frequencies when requested. <p>Failure to follow this process will have very negative long-term impacts:</p>

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					<p>- an ever growing risk of interference between own systems.</p> <p>- the ever-increasing pressure from the commercial sector: having an accurate view of military use of spectrum is an essential precondition to be able to defend it against civil encroachment.</p> <p>For CCEB interoperability this standard is not applicable.</p>
		ACP 190 (B) NATO Suppl 2			For CCEB interoperability this standard is not applicable
		SMADEF XML Rel.3.0.0			For CCEB interoperability Rel.1.2.3 is mandatory
		SIMPLE (STANAG 5602 ed.3:2010)			SIMPLE provides specifications to interconnect ground rigs of all types for

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
					TDL interoperability testing
			Link-11 (STANAG 5511 ed.7:2008, M-Series)		<p>For further guidance refer to the Bi-SC Data Link Migration Strategy, November 2000.</p> <p>For CCEB interoperability the standard is MIL-STD 6011C</p>
		Link-16 (STANAG 5516 ed.4:2008, J-Series)	Link-16 (STANAG 5516 ed.5:2009 RD, J-Series)		<p>For CCEB interoperability the mandatory standard is MIL-STD 6016C Change 1 and the emerging standard is MIL-STD 6016D</p> <p>Used in Profiles: AMN, FMN</p>
		Link-22 (STANAG 5522 ed.2:2008, J-Series)	Link-22 (STANAG 5522 ed.3:2009 RD, J-Series)		Used in Profile: AMN
			Technical characteristics of the Link 22 TDL system		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			(STANAG 4610 ed.1 (Draft))		
				Link-14 (STANAG 5514 ed.2:2002)	The Link-14 is a legacy system that most NATO nations have no intention to implement in new platforms other than interfacing data link buffers and have ceased to use or maintain. Therefore considered fading
			NFFI, STANAG 5527 (study)		<p>Until the development of STANAG 5527 is more stable, document AC/322(SC/5) N(2006)0025 should be used.</p> <p>For CCEB interoperability this standard is not applicable.</p> <p>Used in Profiles: AMN, FMN, tactESB</p>
	Track Database Services				
	Track Correlation Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Track Interoperability Services				
	Track Dissemination Services				
	Track Messaging Service				
	Track Streaming Service				
	Track Broadcasting Service				
	Track Augmentation Services				
	Track Logging Services				
	Common Operational Picture Services				
	Battlespace Object Services				
	Battlespace Object Discovery Services				
	Battlespace Object Identity Services				
	Battlespace Object Information Services				
	Ordnance Information Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Order of Battle Services				
	Weapon System Information Services				
	Battlespace Object Computing Services				
	Battlespace Object Pattern Analysis Services				
	Battlespace Object Relationship Validation Services				
	Battlespace Events Services				
	Reporting Services				
	Alerting Services				
	Incident Reporting Services				
	Position Reporting Services				
	Mission Reporting Services				
	Situation Reporting Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Status Reporting Services				
	Overlay Management Services				
Operational Planning Services					
	Targeting Services				
	Targeting Computing Services				
	Target List Validation Services				
	Targeting Information Services				
	Target Material Services				
	Target Lists Services				
	Target Status Services				
	ADL and AFL Management Services				
	Courses of Action (COA) Services				
	Deployment Plan Services				
	Campaign Synchronisa-				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	tion Matrix Services				
Tasking and Order Services					
	Operations Order Services				
	Resource Allocation Services				
	Resource Request Management Services				
	Tasking Services				
	ROE Management Services				
COI-Enabling SMC Services					
	Data Exchange Monitoring Services				
Business Support Services					
	Business Process Integration Services				
	Business Data Management Services				
	Business Intelligence Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Enterprise Project Planning Services				
	Business Object Search Services				
COI-Enabling IA Services					
Modeling and Simulation Services					
			OMG Systems Modeling Language (OMG SysML) Version 1.1, November 2008. SysML is a Systems Engineering standard.		
	Coalition Battle Management Services				
COI-Specific Services					
Air COI Services					
	Air Information Services				
		Joint Brevity Words Publication (APP-7(E) Change 1, STANAG			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		1401 ed.14:2011)			
	Recognised Air Picture (RAP) Services				
	Air Tasking Order (ATO) Services				
	Air Space Management Services				
	Asset List Services				
	Air Coordination Order (ACO) Services				
	Air Operations Directive (AOD) Services				
	Airlift Services				
	Aeronautical Information Services				
	Air Computing Services				
	Air Space Structure Management Services				
	Recognised Air Picture				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	(RAP) Analysis Services				
	Weapon Matching Service				
	ATO Analysis Service				
	Air Threat Analysis Services				
	Air Mobility Analysis Services				
Land COI Services					
	Land Information Services				
	Recognised Ground Picture (RGP) Services				
	Land Computing Services				
	Recognised Ground Picture (RGP) Analysis Services				
Maritime COI Services					
	Maritime Information Services				
	Vessel Position Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Automatic Identification System (AIS) Services				
	Long Range Identification and Tracking (LRIT) Services				
	Over-the-Horizon-Gold (OTH-Gold) Messages Services				
	Technology for Information, Decision and Execution superiority (TIDE) Sensor Services				
	Format Alfa Services				
	Shipping Routes Network Services				
	Water Space Management (WSM) Services				
	Maritime Computing Services				
	Maritime Anomaly Detection Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Maritime His-torical Analys-is Services				
	Maritime Kin-ematic Analys-is Services				
	Destination Resolution Services				
	Rendezvous Detection Ser-vices				
	Estimated Time of Ar-rival (ETA) Verification Services				
	Geographical Proximity De-tection Ser-vices				
	Maritime Cor-relation and Fusion Ser-vices				
	Mine War-fare Calcula-tion Services				
	SONAR Pre-diction Ser-vices				
	Amphibious Warfare Cal-culation Ser-vices				
Space COI Ser-vices					

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Space In-formation Services				
	Satellite Radar Services				
	Satellite Imagery Services				
Environmental COI Services					
	Geography Services				
	Oceano-graphy Ser-vices				
	Hydrography Services				
	Space Weath-er Services				
	Meteorology Services				
		Specifications for Naval Mine Warfare Information and for Data Transfer - AMP 11 (STANAG 1116 ed.9:2010)			For CCEB interoperability this standard is not applicable
		NATO Handbook of Military Oceanographic Information and Services(STANAG			For CCEB interoperability this standard is only applicable for NATO lead operations

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		1171 ed.9:2008)			
				NATO Oceano- graphic Data Ex- change Format (STANAG 1317 ed.3:2008)	For CCEB in- teroperability this standard is only applicable for NATO lead operations
		Interoperabil- ity between Naval Mine Warfare Data Centres (STANAG 1456 ed.2:2010)			For CCEB in- teroperability this standard is not applicable
		Warning and Reporting and Hazard Predic- tion of Chem- ical, Biologic- al, Radiologic- al and Nuc- lear Incidents (STANAG 2103 ed.10:2010)			For CCEB in- teroperability this standard is only applicable for NATO lead operations
		Adoption of a Standard Bal- listic Meteor- ological Mes- sage (STANAG 4061 ed.4:2000)			For CCEB in- teroperability this standard is only applicable for NATO lead operations

SUBAREA / SERVICE CATEGORY	CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
		Adoption of a Standard Artillery Computer Meteorological Message (STANAG 4082 ed.3:2012)			For CCEB interoperability this standard is only applicable for NATO lead operations
		Format of Requests for Meteorological Messages for Ballistic and Special Purposes (STANAG 4103 ed.4:2001)			For CCEB interoperability this standard is only applicable for NATO lead operations
		Adoption of a Standard Target Acquisition Meteorological Message (STANAG 4140 ed.2:2001)			For CCEB interoperability this standard is only applicable for NATO lead operations
		NATO Meteorological Codes Manual (STANAG 6015 ed.4:2005)			For CCEB interoperability this standard is only applicable for NATO lead operations
		Adoption of a Standard Gridded Data Meteorological Message			For CCEB interoperability this standard is only applicable

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		(STANAG 6022 ed.2:2010)			for NATO lead operations
		Binary Universal Form for the Representation of meteorological data (BUFR) (WMO FM 94:2002)			
		Gidded Binary (GRIB) (WMO:1994)			Gridded Binary - WMO - Standard format for grid fields; WMO Manual Code Nr. 306
		Simple Knowledge Organization System Reference (SKOS) (W3C:2002)			For the description of vocabularies and Term Concept Maps of semantic web services.
	Meteorological Products Services				
Logistics COI Services					
		EDIFACT (ISO 9735:2002)			EDIFACT can be used to transfer business documents such as purchase orders, invoices, and electronic funds transfer inform-

SUBAREA / SERVICE CATEGORY	/ CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
					ation. ebXML is a UN standard
		RFID Application Interface, ISO 15961:2004			
		RFID Data Encoding Rules, ISO 15962:2004			
		RFID - Freight containers, ISO 17363:2007			
		RFID - Returnable transport items, ISO 17364:2009			
		RFID - Transport units, ISO 17365:2009			
		RFID - Product packaging, ISO 17366:2009			
		RFID - Product tagging, ISO 17367:2009			
			OAGIS 9.4.1:2009, OAGi		
			PLCS, ISO 10303-239:2005		
			S1000D issue 4:2008, ASD-AIA-ATA		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		S2000M issue 4:2005, ASD-AIA-ATA			
		NATO Policy for Systems Life Cycle Mgmt (SLCM), C-M(2005)0108			SLCM is primarily based on AAP 48 and ISO/IEC 15288
	Force Support Engineering Services				
	Financial Services				
	Maintenance and Repair Services				
	Movement and Transportation Services				
	Logistics C2 Services				
	Human Resources Services				
	Medical Services				
	Medical Support Services				
	Logistics Status Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Evacuation Management Services				
	Logistics Computing Services				
	Casualty Rate Estimation Services				
	Stockpile Analysis Services				
	Logistics Information Services				
	Supply Services				
	Asset Tracking Services				
	Casualty Status Services				
	Consignment Services				
	Patient Tracking Services				
JISR COI Services					
	JISR Information Services				
	Video Services				
	Imagery Services				
	Sensor Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Request for Information (RFI) Services				
	Intelligence Situation Services				
	Exploitation Report Services				
	Collection and Exploitation Plans Services				
	Sensor Planning Services				
		Sensor Planning Service (SPS) (OGC 09-000:2011)			Used in Profile: FMN
	Commercial Surveillance Radar Services				
	Military Surveillance Radar Services				
	Intelligence Requirement Services				
	Battle Damage Effects Assessment Services				
	ISR Synchronisation Matrix Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Decision Support Information Services				
	Imagery Manipulation Services				
	JISR Annotation Services				
	Intelligence Report Services				
	Video Manipulation Services				
	JISR Computation Services				
	Effects List Validation Services				
	Collection and Exploitation Plan Analysis Services				
	Intelligence Requirement Validation Services				
	Exploitation Report Validation Services				
	Multi-spectral Pixel Data Fusion Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Imagery Pat-tern Recogni-tion Services				
CIMIC COI Services					
	CIMIC In-formation Services				
	International Criminal Po-lice Organiza-tion (INTER-POL) Services				
	National Law Enforcement Services				
	World Cus-toms Organiz-ation (WCO) Services				
	European Uni-on (EU) Mari-time Surveil-lance (MAR-SUR) Services				
Special Opera-tions COI Ser-vices					
EW COI Ser-vices					
	EW Informa-tion Services				
	Restricted Fre-quency List Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	NEDB Ser- vices				
	EW Comput- ing Services				
	Emitter Ana- lysis Services				
CBRN COI Services					
ETEE COI Ser- vices					
Missile De- fence COI Ser- vices					
	Missile De- fence Inform- ation Services				
	TBMD De- fence Design Services				
	Missile De- fence Com- puting Ser- vices				
	TBMD Re- source Ser- vices				
	TBMD De- fence Design Analysis Ser- vices				
	TBMD Re- source Analys- is Services				
COI-Specific IA Services					

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Vulnerability Management Services				
	On-Site Vul-nerability As-sessment Ser-vices				
	Penetration Testing Ser-vices				
	COMPUSEC Bulletin Ser-vice				
	Web-Site Test-ing Services				
	On-Line Vul-nerability As-sessment Man-agement Ser-vice				
COI-Specific SMC Services					
Joint COI Ser-vices					
	Surface Area Management Services				
CIS COI Ser-vices					
	Spectrum Management Services				
	Spectrum Us-age Informa-tion Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
Modeling and Simulation COI Services					
		CORBA/IIOP 2.2:2009 (OMG)			
				Distributed Interactive Simulation (DIS) (IEEE 1278.1a:1998)	
		Modeling and Simulation High Level Architecture (HLA) (IEEE 1516:2000)			For CCEB interoperability this standard is mandatory
	Modeling and Simulation Infrastructure Services				
	Modeling and Simulation Integration Services				

3.3.3. Communications Services

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			ZigBee 1.0		
			WiBree		
			W-USB		
			6LoWPAN		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			5G		
			Mobile WiMax		
			Mobile-Fi		
			WiBro		
			HIPERMAN		
			Flash-OFDM		
			AODV		
			DSR		
			UWB		
			OGSA		
			OSGi		
			SCTP		
			CAP		
		Media Access Control (MAC) Bridges (IEEE 802.1D:2004)			
		Rapid Reconfiguration of Spanning Tree (IEEE 802.1W:2004)			
			Multiple Spanning Trees (IEEE 802.1S:2004)		
		Virtual Bridged Local Area Networks (VLAN) (IEEE 802.1q:2005)			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Link Layer Discovery Protocol (IEEE 802.1AB:2009)			
		Gigabit Ethernet, 1000BASE-LX10 (IEEE 802.3-2013)			Used in Profile: FMN
		Generic cabling for customer premises (ISO/IEC 11801:2002)			Used in Profile: FMN
		Optical Fibre Cables (ITU--T G.652:2009)			Used in Profile: FMN
		LC connectors with protective housings (ISO/IEC 61754-20:2012)			Used in Profile: FMN
		FDDI, ISO 9314:1989			For CCEB interoperability this standard is not applicable.
		Characteristics of 1200/2400/3600 bps single tone modulators/demodulators for HF Radio links (STANAG 4285 ed.1:1989)			For CCEB interoperability the mandatory standard is MIL-STD-188-110A

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Non-Hopping Serial TONE HF Radio, STANAG 4415 ed.1:1999			
		Minimum Standards for Naval Shore-to-Ship Broadcast Systems, STANAG 4481 ed.1			
		Characteristics of single tone modulators/demodulators for maritime HF radio links with 1240 Hz bandwidth, STANAG 4529 ed.1			
		Automatic Radio Control System for HF Links STANAG 4538 ed.1:2009	Automatic Radio Control System for HF Links STANAG 4538 ed.2 (Draft)		
		Non-hopping HF Communications Waveforms STANAG 4539 ed.1:2006			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Minimum Standards for Naval low Frequency (LF) Shore-to-Ship Surface Broadcast Systems (STANAG 5065 ed.1:1999)			
		Profile for HF radio data communications (STANAG 5066 ed.3:2010)			
		Communication between Single Channel and Frequency Hopping Radios in VHF, (STANAG 4292 ed.2:1987)			
				Non-secure Voice Interoperability for VHF Radios, (STANAG 4448 ed.1:2006)	
				Secure Voice and	

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
				Data In-terface for VHF Radi-os, STANAG 4449 ed.1:2006	
		Have Quick STANAG 4246 ed.3:2009			For CCEB in-teroperability this standard is not applicable
		STANAG 4372 ed.3:2008 (Saturn)			UHF standard for Link-22, but can also carry Link-11 and Link-16 mes-sages.
		Multi-Hop IP Networking with legacy UHF radios: Mobile ad-hoc Relay Line of Sight Net-working (MARLIN), STANAG 4691 ed.1 (RD)			
			Digital Inter-operability between UHF Satellite Com-munications Terminals - In-tegrated Waveform (IWF), STANAG		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			4681 ed.1 (RD)		
		Super High Frequency (SHF) Military Satellite (MILSAT-COM) jam-resistant modem (STANAG 4376 ed.1:1998)			For CCEB interoperability this standard is not applicable
			Interoperability Standard for Satellite SHF Deployable Terminals Control and Command Services (STANAG 4706:2013)		
Transmission Services					
		MIDS terminals STANAG 4175 ed. 4:2009	MIDS terminals STANAG 4175 ed. 5 (RD)		
				Single serial line interface (TIA-232-E:1991)	
				Multi-point serial line	

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
				(TIA-422-B:2005)	
		Serial binary data exchange at DTE and DCE (TIA-530-A)			
		Generic specification for optical waveguide fibers (EIA 4920000:1997)			
		VLF and LF Broadcast OOK Systems, STANAG 5030ed.4:1995	Extended range single and multi-channel VLF system, STANAG 4724 /Draft)		
				Conditions for interoperability of 2400 BPS / HF (STANAG 4197 ed.1:1984)	(QSTAG 1108)
Transmission IA Services					
Transmission SMC Services					
Wired Wide Area Transmission Services					
Wired Metropolitan Area					

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
Transmission Services					
Wireless LOS Mobile Transmission Services					
	Wireless LOS Mobile Narrowband Transmission Services				
		STANAG 4444 ed.1:1999 RD (Slow hop EC-CM)	STANAG 4444 ed.2:2010 RD (Slow hop EC-CM)		HF standard for Link-22. For CCEB interoperability this STANAG is mandatory
		Technical standards for single channel HF radio equipment, STANAG 4203 ed.3:2007			For CCEB interoperability the mandatory standard is MIL STD 188-141A
		Technical standards for single channel VHF radio equipment STANAG 4204 ed.3:2008			For CCEB interoperability the mandatory standard is MIL STD 188-242
		Technical standards for single channel UHF ra-			For CCEB interoperability the mandatory

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		dio equipment STANAG 4205 ed.3:2005			standard is MIL STD 188-243
		Interoperabil- ity Standard for 25 kHz UHF/ TDMA/ DAMA ter- minal Wave- form STANAG 4231 ed.5:2011			STANAG 4231 ed.5 is identic- al with MIL- STD-188-183C. For CCEB in- teroperability the mandat- ory stand- ard is MIL- STD-188-183D
		Overall Su- per High Fre- quency (SHF) Military Satel- lite COMmu- nications (MILSAT- COM) interop- erability stand- ards (STANAG 4484 ed.2:2003)	Overall Su- per High Fre- quency (SHF) Military Satel- lite COMmu- nications (MILSAT- COM) interop- erability stand- ards (STANAG 4484 ed.3 (RD))		For CCEB in- teroperability this standard is not applicable
	Wireless LOS Mobile Wide- band Trans- mission Ser- vices				
Wireless LOS Static Trans- mission Ser- vices					

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Wireless LOS Static Narrowband Transmission Services				
	Wireless LOS Static Wideband Transmission Service				
Wireless BLOS Static Transmission Services					
	Wireless BLOS Static Narrowband Transmission Services				
	Wireless BLOS Static Wideband Transmission Services				
		Super High Frequency (SHF) Medium Data Rate (MDR) Military Satellite COMmunications (MILSAT-COM) jam-resistant modem interoper-	Super High Frequency (SHF) Medium Data Rate (MDR) Military Satellite COMmunications (MILSAT-COM) jam-resistant modem interoper-		For CCEB interoperability this standard is not applicable

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		ability stand-ards (STANAG 4606 ed.1:2009)	ability stand-ards (STANAG 4606 ed.3 (RD))		
			Interoperabil-ity stand-ard for Satel-lite Broad-cast Services (SBS) (Draft) (STANAG 4622 ed.1 RD2)		For CCEB in-teroperability this standard is not applicable
Wireless BLOS Mobile Trans-mission Ser-vices					
		SHF MILSATCOM Non-EPM mo-dem for ser-vices conform-ing to class-A of STANAG 4484 (STANAG 4485 ed.1:2002)	SHF MILSATCOM Non-EPM mo-dem for ser-vices conform-ing to class-A of STANAG 4484 (STANAG 4485 ed.2 (RD))		For CCEB in-teroperability this standard is not applicable
		Super High Frequency (SHF) Mil-itary Satel-lite COMMu-nications (MILSAT-COM) Fre-quency Di- vision Mul-	Super High Frequency (SHF) Mil-itary Satel-lite COMMu-nications (MILSAT-COM) Fre-quency Di- vision Mul-		For CCEB in-teroperability this standard is not applicable

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		tiple Access (FDMA) Non-EPM modem for services conforming to class-B of STANAG 4484 (STANAG 4486 ed.2:2002)	tiple Access (FDMA) Non-EPM modem for services conforming to class-B of STANAG 4484 (STANAG 4486 ed.3:2008)		
		Digital inter-operability between EHF Tactical Satellite Communications Terminals (STANAG 4233 ed.1:1998)			For CCEB inter-operability the mandat-ory stand-ard is MIL-STD-1582D
		EHF MIL SATCOM inter-operability standards for medium data rate services STANAG 4522 ed.1:2006			For CCEB inter-operability the mandat-ory stand-ard is MIL-STD-188-136
	Wireless BLOS Mo- bile Narrow- band Trans- mission Ser- vices				
	Wireless BLOS Mo- bile Wide-				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	band Trans- mission Ser- vices				
Wired Local Area Transmis- sion Services					
Communica- tions Access Services					
				X.25 (1996, Cor.1:1998)	
		MPLS (IETF RFC 3031: 2001, 3032:2001)			
		Tactical Com- munications, STANAGs 4637ed1:2009, STANAG 4638ed1:2009, 4639ed1:2009, 4640ed1:2009, 4643ed1:2009 4644ed1:2009, 4646ed1:2009, 4647ed1:2009			For CCEB in- teroperability this standard is not applicable
		ISDN: ITU-T G, I Series			ISDN Tele- phony
		Physical/elec- trical char- acteristics of hierarchical di- gital inter- faces, ITU-T G.703 (11/2001)			Used in Profile: FMN

SUBAREA / SERVICE CATEGORY	CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
		Synchronous frame structures used at 1544, 6312, 2048, 8448 and 44 736 kbit/s hierarchical levels, ITU-T G.704 (10/1998)			Used in Profile: FMN
			UMTS (3GPP)		
			GPRS (3GPP)		
				ITU-T E, P, Q, V Series	
		Digital Video Broadcasting (DVB) (ET-SI:2009)			
				ITU-T V.90:1998	
				ITU-T V.42:2002 Corrigendum 1:2003	
				User Network Interface - UNI v4.0 (af-sig-0061.000)	
				Private Network - Network Interface - PNNI v1	

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
				(af-pnni-0055.000)	
				LAN Emulation over ATM LANE v2.0 (af-lane-0084.000, af-lane-0112.000)	For CCEB interoperability - this standard is not applicable.
		Standards for Data Forwarding between Tactical Data Systems employing Link-11/11B and Link-16 (STANAG 5616 ed.5:2011)	Standards for Data Forwarding between Tactical Data Systems employing Link-11/11B and Link-16 (STANAG 5616 ed.6 (RD))		Gateway between Link-11 and Link-16. For CCEB interoperability the mandatory standard is MIL-STD 6020
		Link 1 STANAG 5501 ed.5:2011	Link 1 STANAG 5501 ed.6 RD		
			Link 11 STANAG 5511 ed.7:2008		Communications part for Link-11 For CCEB interoperability the standard is MIL-STD 6011C Used in Profiles: AMN, FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		STANAG 4175 ed.4:2009	STANAG 4175 ed.5 (RD)		Communica-tions part for Link-16 Used in Profile: AMN
		MIDS SSS-M-10001			Multifunctional Information Distribution System - System Segment Specification
		STANAG 7085 ed.3:2009 (IDL for Imaging Systems)			STANAG 7085 provides the interoperability standards for 3 classes of imagery DL used for primary imagery data transmission.
		STANAG 4586 ed.3:2012	STANAG 4586 ed.4		STANAG 4586 facilitates communication between a UCS and different UAVs and their payloads as well as multiple C4I users.
Analogue Access Services					
Digital (Link) Access Services					
Message-based Access Services					

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Short Mes-saging Access Services				
	Tactical Mes-saging Access Services				
		Maritime Tac-tical Wide Area Network-ing (ACP 200)			For CCEB in-teroperability the mandatory standard is ACP 200 :Maritime Tactical Wide Area Network-ing
		Routing and Directory for tactical Sys-tems, STANAG 4214 ed.2:2005			
		International Network Num-bering for Commu-nica-tions Sys-tems in Use in NATO, STANAG 4705 ed.1 (RD)			Used in Profile: FMN
			Gateway Mul-tichannel Cable Link (Optical), STANAG 4290 ed.1 (RD)		

SUBAREA / SERVICE CATEGORY	CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
		Enhanced Digital Strategic Tactical Gateway (EDSTG) (STANAG 4578 ed. 2:2009)		STANAG 4249 replaced by the more fundamental STANAG 4206. STANAG 4206 not to be used for new systems.	STANAG is currently under review for a new edition. For CCEB interoperability this standard is not applicable.
		NATO Multi-channel tactical digital Gateway (STANAG 4206: Ed.3:1999)			For CCEB interoperability this standard is not applicable
		NATO Multi-channel tactical Gateway-Multiplex Group Framing Standards (STANAG 4207: Ed.3:2000)			
		The NATO Military Communications Directory System, STANAG 5046 ed.3	The NATO Military Communications Directory System, STANAG 5046 ed.4 (RD)		
Circuit-based Access Services					

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Native Circuit-based Access Services				
	Emulated Circuit-based Access Services				
Frame-based Access Services					
	Native Frame-based Access Services				
	Emulated Frame-based Access Services				
Packet-based Access Services					
		IP packet transfer and availability performance parameters (ITU-T Y.1540:2011)			Used in Profile: FMN
		Network performance objectives for IP-based services (ITU-T Y.1541:2011)			Used in Profile: FMN
		Framework for achieving end-to-end IP performance ob-			Used in Profile: FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		jectives (ITU-T Y.1542:2006)			
		Quality of service ranking and measurement methods for digital video services delivered over broadband IP networks (ITU-T J.241:2005)			Used in Profile: FMN
	IPv4 Routed Access Services				
	IPv6 Routed Access Services				
	Virtual Private Network (VPN) Services				
Multimedia Access Services					
	Voice Access Services				
	Video Access Services				
	VTC Access Services				
Communications Access IA Services					
	Network Firewall Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
Communica- tions Access SMC Services					
	Call Manage- ment Services				
		Session Ini- tialisation Pro- tocol (SIP) (IETF RFC 3261:2002, up- dated by 3265:2002, 3853:2004, 4320:2006, 4916:2007, 5393:2008, 5621:2009, 5626:2009, 5630:2009, 5922:2010)			Used in Profile: FMN
	VTC Man- agement Ser- vices				
	Demand As- signed Mul- tiple Ac- cess (DAMA) Control Ser- vices				
	Resource Dis- covery Ser- vices				
	Resource Configura- tion and Ac- tivation Ser- vices				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Resource Testing Services				
	Collect, Update and Report Resource Configuration Services				
	Survey and Analyse Resource Trouble Services				
	Localise Resource Trouble Services				
	Correct and Recover Resource Trouble Services				
	Track and Manage Resource Trouble Services				
	Monitor Resource Performance Services				
	Control Resource Performance Services				

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
	Collect Resource Data Services				
Transport Services					
			Internet Protocol Quality of Service (IP QoS), STANAG 4711 (Draft)		
			IP QoS for the NII, NC3A TN-1417		Used in Profile: FMN
		Differentiated Services Field (IETF RFC 2474:1998 updated by 3168:2001, 3260:2002)			DiffServ re-defines use of former TOS field; first, but not sufficient RFC to differentiate traffic classes. RFC for DiffServ still missing. Applicable to both IPv4 and IPv6. Included in Profile: FMN
		Configuration Guidelines for DiffServ Service Classes (RFC 4594:2006)			Included in Profile: FMN
		Resource Re-SerVation Protocol (RSVP)			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		(IETF RFC 2205:1997)			
		Requirements for IPv4 routers (RFC 1812:1995 updated by 2644:1999)			Used in Profile: FMN
		Open Shortest Path First (OSPFv2) RFC 2328:1998)	OSPF for IPv6 (RFC 5340:2008)		Suitable for LANs as well as WANs (including tactical networks) with sufficient bandwidth
		IS to IS intra-domain routing information exchange protocol (ISO/IEC 10589:2002)			
		Router Internet Protocol (RIP v2) (IETF STD 56/RFC 2453:1998 updated by 4822:2007)	RIPng for IPv6 (RFC 2080:1997)		
		Border Gateway Protocol (BGP4) (RFC 4271:2006)			
		Multiprotocol Extensions for BGP-4 (RFC 4760:2007)	Use of BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Rout-		Used in Profiles: FMN, tactESB

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			ing (RFC 2545:1999)		
		BGP Communities Attribute (RFC 1997:1996)	BGP Extended Communities Attribute (RFC 4360:2006)		Used in Profiles: FMN, tactESB
		Capabilities Advertisement with BGP-4 (RFC 5492:2009)			Used in Profile: FMN
			BGP Support for Four-Octet Autonomous System (AS) Number Space (RFC 6793:2012)		Used in Profiles: FMN, tactESB
			4-Octet AS Specific BGP Extended Community (RFC 5668:2009)		Used in Profiles: FMN, tactESB
			BGMP (RFC 3913:2004)		
		Application of BGP-4 (RFC 1772:1995)			
		Protocol Independent Multicast Sparse Mode(PIM-SM) (RFC 4601:2006, up-			PIM-SM is implemented by the router market leaders. Used in Profiles: AMN, FMN

SUBAREA / SERVICE CATEGORY	/ CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
		dated by 5059:2008)			
			Simplified Multicast Forwarding (SMF) (RFC 6621:2012)		Used in Profile: tactESB
			Protocol Independent Multicasting Dense Mode (PIM-DM) (RFC 3973:2005)		PIM-DM is included as a second concept for tactical networks
		Multicast Source Discovery Protocol (MSDP) (RFC 3618:2003)			Used in Profiles: FMN, tactESB
		Generic Routing Encapsulation (GRE) (RFC 4023:2005, updated by 5332:2008)			GRE is included as a general routing encapsulation mechanism
		Traditional IP Network Address Translator (RFC 3022:2001)			
			Stateless IP/ICMP Translation Algorithm (SIIT) (RFC 2765:2000)		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			Generic Packet Tunneling in IPv6 (RFC 2473:1998)		This RFC is a generic tunnel mechanism, which can be applied for several protocols.
		Router Internet Protocol (RIPv2) MIB extension (RFC 1724:1994)			To be used in static networks. See also System Management.
		Classless Inter Domain Routing (CIDR) (RFC 4632:2006)			CIDR is only valid for IPv4 Used in Profiles: FMN, tactESB
		Mobile IPv4 (RFC 3344:2002 updated by 4721:2007)	Mobile IPv6 (RFC 3775:2004)		
			Mobile IPv6 Fast Handovers (RFC 5568:2009)		
			IPSec and Mobile IPv6 (RFC 3776:2004 updated by 4877:2007)		
			Policy-based Network Management - General (RFC 1104:1989, 2753:2000,		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			3198:2001, 3334:2002)		
			Policy-based Network Management - DiffServ (RFC 2963:2000, 2998:2000, 3086:2001, 3260:2002, 3287:2002, 3289:2002, 3290:2002, 3308:2002, 3496:2003)		
			Policy-based Network Management - Int-Serv (RFC 2205:1997 updated by 2750:2000, 3936:2004, 4495:2006, 2206 - 2210:1997, 2380:1998, 2382:1998, 2430:1998, 2490:1999, 2745 - 2746:2000, 2747:2000 updated by 3097:2001, 2749:2000, 2750:2000, 2755:2000, 2814:2000,		

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
			2872:2000, 2961:2001, up- dated by 5063:2007; 2996:2000, 3097:2001, 3175:2001, up- dated by 5350:2008; 3181:2001, 3182:2001, 3209:2001 up- dated by 3936:2004, 4874:2007; 3210:2001, 3468:2003, 3473:2003 up- dated by 4003:2005; 3474:2003, 3476:2003, 3477:2003 4201:2005, 4783:2006, 4873:2007, 4874:2007, 5250:2008, 5420:2009		
		Point to Point Protocol (PPP) Internet Protocol Control Protocol (IPCP) (RFC 1332:1992 updated by 3241:2002, 4815:2007)			To allow packet switched services over circuit switched interconnections.

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Layer 2 Tunneling Protocol (L2TP) (RFC 3308:2002)			
		Link Control Protocol (LCP) extensions (RFC 1570:1994 updated by 2484:1999)			Addition to LLC1 (see Link Layer).
		Point to Point Protocol (PPP) (STD 51, RFC 1661:1994 updated by 2153:1997; 1662:1994, updated by 5342:2008)	IPv6 over PPP (RFC 5072:2007)		Used in Profiles: FMN, tactESB
		PPP Challenge Handshake Authentication Protocol (CHAP) (RFC 1994:1996 updated by 2484:1999)			Used in routers. Used in Profile: FMN
		PPP Multilink (MP) (RFC 1990:1996)			Allows for aggregation of bandwidth via multiple simultaneous data link connections

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Virtual Router Redundancy Protocol (VRRP), IETF RFC 3768:2004			
		Winsock 2 (Revision 2.2)			
				Transport Service (ISO 8072:1996) deleted in NCSP v.6	
		TCP (IETF STD 7:1981, RFC 793:1981 updated by RFC 1122:1989, 3168:2001)			Used in Profiles: AMN, FMN, tactESB
		UDP (IETF STD 6:1980, RFC 0768:1980)			Used in Profiles: FMN, tactESB
		OSI transport svc over TCP/IP (RFC 2126:1997)			Includes the ISO Transport Protocol
		Space communications protocol specification (SCPS) - Transport protocol (SCPS-TP) (ISO 15893:2010)			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
Edge Transport Services					
	Link Emulation Transport Services				
	Time Division Multiplexed-based Transport Services				
	Frame-based Transport Services				
	IP-based Transport Services				
		Assigned Numbers (RFC 3232:2002)			
		IPv4 (STD 5, RFC 791:1981, 792:1981, 826:1982, 894:1984, 919:1984, 922:1984, 950:1985 updated by RFC 1112:1989, 2365:1998, 2474:1998, 2507:1999, 2508:1999, 2908:2000, 3168:2001, 3171:2001,			Used in Profiles: AMN, FMN, tactESB

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		3260:2002, 3376:2002, 4604:2006, 4884:2007)			
		IPv6 (RFC 1981:1996, 2375:1998, 2460:1998, 2464:1998, 2467:1998, 2470:1998, 2491:1999, 2492:1999, 2497:1999, 2526:1999, 2529:1999, 2590:1999, 2710:1999 up- dated by 3590:2003, 2711:1999, 2894:2000, 3056:2001, 3111:2001, 3122:2001, 3146:2001, 3306:2002, 3307:2002, 3483:2003, 3510:2003, 3544:2003, 3587:2003, 3595:2003, 3697:2004, 3736:2004, 3810:2004, 3879:2004, 3956:2004, 4001:2005, 4007:2005,			Note: Cat- egory of RFC 2375:1998 is 'Informal' Used in Pro- files: AMN, FMN, tactESB

SUBAREA / SERVICE CATEGORY	CATEGORY / SUBCATEGORY	MANDATORY STANDARDS	EMERGING	FADING	Remarks
		4213:2005, 4291:2006, 4311:2005, 4338:2006, 4443:2006, 4489:2006, 4604:2006, 4861:2007, 4862:2007, 4884:2007, 4941:2007, 5095:2007, 5172:2007, 5494:2009)			
		IGMP v.3 (RFC 3376:2002 updated by 4604:2006)			RFC 3367:2002 obsoleted 2236:1997 updates RFC 1112:1989 and is widely implemented, RFC 3376:2002 obsoleted RFC 2236:1997
		Host requirements (STD 3, IETF RFC 1122:1989 updated by 2474:1998, 2181:1997, 3168:2001, 3260:2002, 4033:2005, 4034:2005, 4035:2005, 4343:2006, 4379:2006, 4470:2009,			

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		5452:2009, 5462:2009)			
				Bootstrap Protocol, BOOTP (RFC 951:1985 updated by RFC 1542:1993, 2132:1997, 3442:2002, 3942:2004, 4361:2006, 4833:2007, 5494:2009)	Will be overtaken by the richer DHCP. BOOTP is still available in older implementations and is expected to phase out.
		IP Encapsulation (RFC 2003:1996)			
				Clarifications and Extensions for the Bootstrap Protocol (RFC 1542:1993)	
			Dual Stack IPv6 mobility support (RFC 5555:2009)		
Core Network Services					
	Packet Routing Services				
		Interconnection of IPv4 Networks at	Interconnection of IPv4 Networks at		Used in Profile: FMN

SUBAREA / SERVICE CATEGORY	CAT-EGORY / SUBCAT-EGORY	MANDAT-ORY STAND-ARDS	EMERGING	FADING	Remarks
		Mission Secret and Unclassified Security Levels, STANAG 5067 ed.1:2007 (RD)	Mission Secret and Unclassified Security Levels, STANAG 5067 ed.2 (Draft)		
	Frame Switching Services				
	Circuit Switching Services				
Aggregation Services					
	Packet-based Aggregation Transport Services				
	Frame-based Aggregation Transport Services				
	Circuit-based Aggregation Transport Services				
Broadcast Services					
Transport IA Services					
Transport SMC Services					
Distribution Services					

4. PROFILES

4.1. INTRODUCTION

022. The purpose of this chapter is to specify the NISP near term profiles. The document organizes these profiles under the following considerations:

- Profiles derived from NATO Reference Architectures
- Profiles derived from NATO Operations
- Profiles derived from NATO member nations

023. The above list will be enhanced dynamically, based on updated profile definitions being developed in relevant NATO bodies.

024. The standards being used in these profiles may differ in version from those being listed in chapter 3. This is based on the time for the development of these standards and may be modified in newer versions of these profiles.

025. Standards, which are listed in NISP Vol. 2 and are belonging to one or more profiles, as listed in chap. 4 of this document or in NISP Vol. 3, are marked in the Remarks column as follows:

026. Used in Profile(s): standard1 (, standard2, ...)

027. Standards, which are not included by a valid RFCP in NISP, Vol.2, but are only included in a profile, are marked in the Remarks column in *italics* as follows:

028. Used in Profile(s):*standard1* (, *standard2*, ...)

4.1.1. Profiles derived from NATO Operations

029. This chapter contains profiles from current or future planned NATO operations. Currently, the following operations are recognised:

- Afghan Mission Network (AMN)

4.1.2. Profiles derived from NATO member nations

030. This chapter contains profiles from member nations being proposed for interoperability purposes in NATO and between NATO nations.

4.2. PROFILE SPECIFICATIONS

031. This section summarizes the profiles, listed in volume 3:

4.2.1. NRF Generic Interface Profile

032. The purpose of this profile is to support NRF rotation specific profile development.

4.2.2. Tactical ESB - Profile

033. The aim of this specification is to describe a profile for a tactical Enterprise Service Bus (tact ESB) to be used in a coalition, highly mobile and distributed environment. The profile focuses specifically on requirements from military usage and goes beyond the ESB specification, available in civil implementations/products.

034. The profile is a generic specification; following the principle construction elements, it allows for national implementations a derivation from the proposed one, not losing the interoperability aspects.

035. Details of this profile are contained in: IT-AmtBw_A5_RuDi-High_Level_Concept_400.pdf (DEU)

4.2.3. AMN - Profile

036. The purpose of this specification is to define an Interoperability Standards Profile to support the Afghanistan Mission Network (AMN) in order to enhance the exchange of information within and across the AMN. These are the extant and NATO agreed list of practical standards to achieve immediately usable interoperability between the national network extensions of the NATO nations, coalition nations and NATO provided capabilities.

037. Nations participating in the AMN have agreed to comply with the AMN joining instructions, of which these standards form an integral part.

4.2.4. CES - Profile

038. The Core Enterprise Services Framework ([NC3A CESF, 2009]) describes a set of Core Enterprise Services (CES) – sometimes referred to as the “what” of the NNEC CES. This section addresses the “how” by detailing the profile of functionality and mandated standards for each of the Spiral 1 CES.

4.2.5. Service Interface Profile (SIP) Template Document

039. The aim of this profile is to define a template based on the NCIA and IABG proposal for a standard profiling document, which from now on will be called Service Interface Profile (SIP).

4.2.6. FMN - Profile

040. The FMN Profile is included for notation by NATO Nations in ADatP-34(H) and provides implementation guidance for NATO common funded capabilities used in NATO exercises such as CWIX, Steadfast Cobalt, and Trident Juncture, until formally approved.

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