NATO NORTH ATLANTIC COUNCIL
OTAN CONSEIL DE L'ATLANTIQUE NORD

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7 November 2014

WORKING PAPER
AC/334-WP(2014)0053

WORKING GROUP OF NATIONAL TECHNICAL EXPERTS

NCIA - TBCE - REQUEST FOR AUTHORISATION TO PROVIDE ARCHIVE ISAF RECORDS

(PROJECT 2014/1CM03029)

1. Please find enclosed the above mentioned document prepared by NCIA that is planned for discussion at our next WGNTE meeting to be held on 17 November 2014.

(Signed) J. RODRIGUEZ-ARROYO

Enclosure 1: TBCE NCIA

Original: English

ENCLOSURE
AC/334-WP(2014)0053

NCIA/EM/NLO/2014/03196

24 October 2014

To: NATO Office of Resources
Management and Implementation Branch
Attn: Branch Chief
NATO HQ

Information: See Distribution

Subject: **Request for authorisation to provide ARCHIVE ISAF RECORDS - Project 2014/1CM03029**

CIRIS: PHY-1CM03029-00 Archive ISAF Records
ID: 0001250
CIRIS: EEF-1CM03029-08 Archive ISAF Records
ID:0001273
CIRIS: PSC-1CM03029-09 Archive ISAF Records
ID:0001274

References: a) CUR-1722-2014-COMMAND-RS: ARCHIVE ISAF RECORDS: dated 17 Jul 2014

1. NCIA requests authorisation of € 2,957,855 to implement the capabilities required by the SHAPE as detailed in reference a).

   As described in the TBCE in enclosure 2, this project will deliver the technical solution to allow the transfer and subsequent storage and management of digital Operational Records from the ISAF Mission

2. The Project Price Proposal at Enclosure 1 outlines the NCIA Project Service Costs and the total project expenditure profile in the format agreed by the Investment Committee.

   The price proposal is:

   - € 2,195,529 of investment cost,

   - € 423,763 of Internal Engineering Services (IES) that will be used to enable extraction of the digital operational records from the snapshots of the Functional Services repatriated from the theatre. The IES cover multiple trips to the theatre to hand-carry data and to support the planned bulk data transfer, both requiring recent experience with the subject infrastructure,

   - € 413,563 of Project Service Costs (PSC), less € 75,000 of Advance Planning Funds (APF) already authorised.

   The Project Price Proposal does not cover the scope of the ISAF Archive disposition phase to the NATO Archives which will be subject to a separate request once the target technical solution for the Long Term Digital Records Preservation is known.

3. NCIA requests authorisation of the procurement method AOM ICB and – exceptionally - sole source for urgent capabilities required to repatriate datasets from the theatre. We specifically recommend to:

   a. leverage the current CISAF contract (CO-13125-OPL) with Thales France for providing additional storage capacity in Kabul and provide on-site engineering support to the data transfer (outsourced arrangement). Thales currently provides the majority of CIS services under the CISAF contract, and is capable of delivering the needed solution immediately.

   b. leverage the on-going contract with Telindus N.V. to extend the storage capacity of the AEP infrastructure at SHAPE campus and provide on-site engineering support to the data transfer. Telindus is about to deliver expansion of the existing storage to the AEP / Euro-POP at SHAPE of CIS services which would be used to accommodate the datasets coming from ISAF until the target JFCBS Digital Archive is established, and therefore Telindus is deemed best positioned to provide the needed equipment and services at very short notice.

c. leverage the established contract with VIASAT to source the mobile encrypted drives for hand-carrying data transfer. We need hand-carry data and the only mobile storage solution certified to carry up to NS/MS/IS data comes in the form of VIASAT Eclypt Freedom 600 mobile HDDs.

d. Sole source to the VMWare Enterprise Agreement for the virtualization software. To host the virtual machines first at AEP / Euro-POP, next at the JFCBS Digital Archive we propose to use the NATO Enterprise Agreement with VMware.

4. SHAPE is requested to confirm that the Operations and Maintenance Costs as outlined in the TBCE, Section 10, Table 2, are affordable.

5. The Management and Implementation Branch is requested to screen this request and to submit it to the Investment Committee for authorization.
Any remarks regarding this request should be addressed to Mr Craig Ulsh (NCIA Liaison Officer).

P. Scaruppe

Peter Scaruppe
Director of Acquisition

Enclosures:
1. Project Price Proposal
2. Project Type B Cost Estimate (TBCE)

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Ad Hoc

SL Chief, Lillian Rossini
Project Manager, Lukasz Sokolowski

PROJECT PRICE PROPOSAL
ARCHIVE ISAF RECORDS

I. NSIP DATA

CRO Urgent Requirement 1722-2014
Project 2014/1CM03029

II. Project Cost Estimate

Cost Elements	Cost (€)	% of INV
Investment Costs (-0)	2,195,529	100%
Engineering Services (-8)	423,763	19%
Project Service Costs (-9)	413,563	19%
Advance Planning funds (if any)	-75,000	-
Total Fund Request	**2,957,855**	**-**

III. EXPENDITURE PROFILE

Investment costs	Authorised funds (€)	Current request (€)	Future requests (€)
Expenditure to date	0	0	0
4Q 2014	0	0	0
1Q 2015	0	0	0
2Q 2015	0	1,062,390	0
3Q 2015	0	0	0
4Q 2015	0	0	0
1Q 2016	0	371,595	0
2Q 2016	0	660,744	0
3Q 2016	0	25,200	0
4Q 2016	0	25,200	0
1Q 2017	0	25,200	0
2Q 2017	0	25,200	0
3Q 2017	0	0	0
4Q 2017	0	0	0
1Q 2018	0	0	500,000
Total	**0**	**2,195,529**	**500,000**

IES	Authorised funds (€)	Current request (€)	Future requests (€)
Expenditure to date	0	0	0
4Q 2014	0	60,609	0
1Q 2015	0	68,073	0
2Q 2015	0	68,072	0
3Q 2015	0	68,073	0
4Q 2015	0	68,072	0
1Q 2016	0	30,288	0
2Q 2016	0	30,288	0
3Q 2016	0	30,288	0
4Q 2016	0	0	0
1Q 2017	0	0	0
2Q 2017	0	0	0
3Q 2017	0	0	0
4Q 2017	0	0	0
1Q 2018	0	0	100,000
Total	**0**	**423,763**	**100,000**

PSC	Authorised funds (€)	Current request (€)	Future requests (€)
Expenditure to date	0	0	0
4Q 2014	75,000	58,529	0
1Q 2015	0	55,710	0
2Q 2015	0	55,710	0
3Q 2015	0	55,710	0
4Q 2015	0	55,711	0
1Q 2016	0	10,023	0
2Q 2016	0	10,022	0
3Q 2016	0	10,022	0
4Q 2016	0	10,022	0
1Q 2017	0	8,552	0
2Q 2017	0	8,552	0
3Q 2017	0	0	0
4Q 2017	0	0	0
1Q 2018	0	0	50,000
Total	**75,000**	**338,563**	**50,000**

IV. REQUIREMENTS

The CUR-1722-2014 objective is to deliver the technical solution to allow the transfer and subsequent storage of ISAF records from HQ ISAF owned systems.

V. MILESTONES

Milestone	Milestone Description	Milestone Duration	Milestone Date
T1	Authorization	-	Nov 2014
T2	WP1 Contracts award	-	Dec 2014
T3	Data repatriated	-	Mar 2015
T4	RFQ Release	T1 + 2 months	Jan 2015
T5	Contract Award	T4 + 6 months	Aug 2015
T6	Initial Operational Capability	T5 + 4 months	Dec 2015
T7	Full Operational Acceptance	T6 + 2 months	Jan 2016
T8	Submit partial JFAI Request	T7 + 3 months	May 2016
T9	Early support delivered (Physical Scope Completion)	T7 + 12 months	Jan 2017
T10	Submit JFAI Request	T9 + 3.5 months	May 2017

VI. EXPECTED USE

The project will support:

- Managed, safe, timely and assured transfer and migration of ISAF operational records into the JFCBS Archive,
- Scheduled and prioritised transfer out-of-theatre of all ISAF records of Temporary and of Permanent Value to NATO, up to and by ISAF End of Mission (EOM), including ISAF systems storing ISAF records that cannot be exported,
- Transfer of all types of ISAF digital operational records, including Training, Procedural, Development, Support and Personnel records,
- Transfer of Custodianship of ISAF records from HQ ISAF to HQ JFC Brunssum, including the verification of data transfer in line with Information Assurance requirements of HQ JFC Brunssum,
- Management of ISAF systems' metadata,
- Provide a Trusted Digital Repository as part of the JFCBS Archive repository of semi-active ISAF records,
- Management of the JFCBS Archive, its information, metadata, configuration and dependencies by providing the necessary tools and capabilities to the JFCBS HQ Archivist and Team,
- Managed and planned access to ISAF records held in ISAF systems until such time all records have been migrated out of the host systems into the JFCBS Archive.,

- Transfer, conversion and translation, extraction and management of ISAF records from common text, audio and video file formats & structured content (databases) into standardised archival forms, cleansing, consolidation, (de)normalisation and deduplication of ISAF records,
- HQ JFC Brunssum in the analysis, qualification and identification of ISAF records of Temporary and of Permanent Value to NATO,
- Enable future final disposition of ISAF records of Temporary Value and transfer the Custodianship of ISAF records of Permanent Value from HQ JFC Brunssum to NATO Archivist (Archive Services).

Price Proposal for Project Service Costs for Project 2014/1CM03029-9

Project No:	NSP010033											
	2014	1.000	2015	1.038	2016	1.076	2017	1.117				
	EUR	Man-Days	EUR	Man-Days	EUR	Man-Days	EUR	Man-Days				
Total Manpower	130,484	119.0	215,899	217.5	39,270	39.3	17,104	15.8				
F1 (Senior Expert)		41.7		36.0								
F2 (Expert)		65.5		163.0		34.6		15.8				
F3 (Senior Technician)												
F4 (Technician)												
F5 (Military Expert)		11.8		18.5		4.6						
Consultancy												
Travel	3,045		6,942		818							
Other Expenses												
Total Project Cost	133,529		222,841		40,089		17,104					

	2018	1.159	2019	1.202	2020	1.247	TOTAL	
	EUR	Man-Days	EUR	Man-Days	EUR	Man-Days	EUR	Man-Days
Total Manpower		0.0		0.0		0.0	402,758	391.5
F1 (Senior Expert)								77.6
F2 (Expert)								278.9
F3 (Senior Technician)								0.0
F4 (Technician)								0.0
F5 (Military Expert)								34.9
Consultancy							-	
Travel							10,805	
Other Expenses							-	
Total Project Cost	-		-		-		413,563	

Work Breakdown Structure for Project Service Costs for 2014/1CM03029-9

Task Name	F1	F2	F3	F4	F5	Total (MD)
Project Scope (WBS)	67.1	241.2			30.2	338.5
Project Board/Project Direction	6.8					6.8
Portfolio Management (9%)	6.8					6.8
Portfolio Management 2014	6.8					6.8
Project Support Elements		42.5			20.0	62.5
ASG / Contracting Support (15%)		42.5				42.5
ASG Contracting Support 2014		5.7				5.7
ASG Contracting Support 2015		36.8				36.8
Project Support					20.0	20.0
Project Support 2015 (+2014 Portion)					16.0	16.0
Project Support 2016					4.0	4.0
Project Management	22.8	101.2			10.2	134.2
Initiating a Project	22.8	32.0			10.2	65.0
Requirements Elicitation and Solution Research	13.1	10.7			3.2	27.0
TBCE Development	9.7	21.3			7.0	38.0
Execution - Monitor, Control & Report		59.2				59.2
Monitor, Control & Report		59.2				59.2
Project Closure		10.0				10.0
Develop / Release Request for JFAI		5.0				5.0
Develop Lessons Learned Report		5.0				5.0
Project Execution (Technical Stages)	37.5	97.5				135.0
Stage 1 - Data Repartiation	3.5					3.5
WP#1	1.0					1.0
Issue Purchase Orders	1.0					1.0
WP#2	2.5					2.5
WP#2.1 - ISAF Archive Storage Loading	2.5					2.5
ISAF IKM populates the storage	2.5					2.5
Stage 2 - Provision of the JFCBS Archive (IOC)	34.0	92.4				126.4
WP#4	25.7	79.6				105.3
Procurement Procedure	15.7	69.6				85.4
RFQ preparation and coordination	11.4	25.8				37.2
Bidding Period	4.3	5.3				9.6
Bid Selection		38.6				38.6
Security Accreditation Activities		10.0				10.0
Design	4.8					4.8
Installation and Configuration	5.1					5.1
WP#5	8.4	12.8				21.1
Setup of the Semi-Active FASes	5.1	9.5				14.6
Data Transfer	3.3					3.3
Return of the ISAF Archive storage		3.3				3.3
Stage 4 - Support to OR Organizing		5.1				5.1
WP#7		5.1				5.1
Provide long-term support in using the JFCBS Archive		5.1				5.1
Contingencies	10.5	37.7	0.0	0.0	4.7	53.0

Price Proposal for Internal Engineering Services for 2014/1CM03029-8

Project No:	NSE010154											
	2014		*1.000*	2015		*1.038*	2016		*1.076*	2017		*1.117*
	EUR		Man-Days	EUR		Man-Days	EUR		Man-Days	EUR		Man-Days
Total Manpower	52,584		60.9	202,584		258.1	88,364		110.9			0.0
F1 (Senior Expert)			8.2			19.9			0.2			
F2 (Expert)			35.7			138.5			55.5			
F3 (Senior Technician)												
F4 (Technician)			11.1			84.7			55.1			
F5 (Military Expert)			5.8			15.0						
Consultancy												
Travel	8,024			69,706			2,500					
Other Expenses	1											
Total Project Cost	**60,609**			**272,290**			**90,864**			**-**		

	2018		*1.159*	2019		*1.202*	2020		*1.247*	TOTAL		
	EUR		Man-Days	EUR		Man-Days	EUR		Man-Days	EUR		Man-Days
Total Manpower			0.0			0.0			0.0	343,532		429.8
F1 (Senior Expert)												28.3
F2 (Expert)												229.7
F3 (Senior Technician)												0.0
F4 (Technician)												151.0
F5 (Military Expert)												20.8
Consultancy										-		
Travel										80,230		
Other Expenses										1		
Total Project Cost	**-**			**-**			**-**			**423,763**		

Work Breakdown Structure for Internal Engineering Services for 2014/1CM03029-8

Task Name	F1	F2	F3	F4	F5	Total (MD)
Project Scope (WBS)	27.2	220.9		145.2	20.0	413.3
Project Board/Project Direction	3.3					3.3
Portfolio Management	3.3					3.3
Portfolio Management 2014	3.3					3.3
Project Execution	23.9	220.9		145.2	20.0	410.0
Monitor, Control & Report		33.2				33.2
IES Technical Stage 1 Activities	23.9	187.7		145.2	20.0	376.9
Stage 1 - Data Repartiation	9.5	30.1		33.2	20.0	92.8
WP#2	9.5	25.1		26.1	20.0	80.7
WP#2.1 - ISAF Archive Storage Loading	9.5					9.5
ISAF IKM populates the storage	9.5					9.5
WP#2.2 - Network Data Transmission		7.0		5.1	9.5	21.5
Setup of the replication for archiving		3.0				3.0
Data transmission test		2.0				2.0
Bulk replication		2.0		5.1	9.5	16.5
WP#2.3 - Manual Transport		18.2		21.1	10.5	49.7
Manual collection #1		5.0				5.0
Manual collection #2		6.6		10.5	5.3	22.4
Manual collection #3		6.6		10.5	5.3	22.4
WP#3		5.0		7.1		12.1
Receival at SHAPE, reconnecting at AEP				2.1		2.1
Testing		5.0		5.0		10.0
Stage 2 - Provision of the JFCBS Archive (IOC)		70.7		32.6		103.3
WP#4		16.3				16.3
Security accreditation activities		16.3				16.3
WP#5		54.3		32.6		87.0
Setup of the semi-active FASes		44.3		18.9		63.3
Data transfer		10.0		10.5		20.5
Return of the ISAF Archive storage				3.2		3.2
Stage 3 - Reaching FOC	14.5	33.9		26.3		74.7
WP#6	14.5	33.9		26.3		74.7
Develop technical procedures for data conversion		14.5				14.5
Develop organizational procedures for ISAF OR organiz	9.5	14.5				23.9
Provide early support in using the JFCBS Archive				10.5		10.5
Train the JFCBS staff	5.0	5.0		15.8		25.8
Stage 4 - Support to OR Organizing		53.0		53.0		106.0
WP#7		53.0		53.0		106.0
Provide long-term support in using the JFCBS Archive		53.0		53.0		106.0
Contingencies	1.1	8.8	0.0	5.8	0.8	16.5

CIT Costs	Total (EUR)
Consultancy	0.0
Travel	80,230.0
Other Expenses	1.0

Enclosure 2 to:
NCIA/EM/NLO/2014/03196

Type “B” Cost Estimate

Archive ISAF Records
(SHORT TITLE: CUR-1722-2014)

CUR-1722-2014

Project 2014/1CM03029

NATO Communications and Information Agency
Agence OTAN d’information et de communication

Enclosure 2 to:
NCIA/EM/NLO/2014/03196

Table of Contents

Annex A to
Enclosure 2 to
NCIA/EM/NLO/2014/03196

1 References

1.1 Project start-up and communication

1.1.1 IHQ/DOS/4067/14, 21 Apr 2014.ISAF Electronic Records Archiving – Answer [NR]

1.1.2 OPLAN 10312, 10 Jun 2014, SACEUR OPLAN 10312 for RESOLUTE SUPPORT in AFGHANISTAN [NS]

1.1.3 NCI Agency/EM/NLO/2014/03144, 27 Jun 2014 (A/Slip № 2027299) [NR]

1.1.4 SH/RES/CMRB/DS/594/14, 30 Jun 2014 [NR]

1.1.5 AC/4(PP)D/27373, 2 Jul 2014 [NR]

1.1.6 SH/RES/CMRB/034/14, 17 Jul 2014, ACO J6 tasking on the CUR 1722-2014-COMMANDS-RS: ARCHIVE ISAF RECORDS [NR]

1.1.7 JFCBS/DOM/BIM/IAT/9129, 30 Jul 2014, ARCHIVING OF ISAF RECORDS - PROJECT UPDATE [NU]

1.1.8 NCI Agency/DSO/2014/10909S, 25 Aug 2014, NCI Agency response to Crisis Response Operations Urgent Requirement (CUR) 1722-2014-COMMANDS-RS: ARCHIVE ISAF RECORDS [NR]

1.1.9 NCIA/NCIASIS/08224/ 2014, 3 Sep 2014, Support for CUR 1722 – Theatre dedicated data storage for ISAF records [NR].

1.2 Applicable standards and directives

1.2.1 C-M(2012)0014, 27 Feb 2012, Directive on the Management of Records Generated on Operational Deployment [NU]

1.2.2 AC324-WP(2013)0005-REV2, 26 May 2014, Directive on the Preservation of NATO Digital Information of Permanent Value, [NU]

1.2.3 NCI Agency Technical Report TR-2013/ACO008868/06, 31 Dec 2013, Joining, Membership and Exit Instructions for the Afghanistan Mission Network (AMN), Volume 3, [NUI]

1.2.4 ISO 14721:2012 Space Data and Information Transfer Systems -- Open Archival Information System (OAIS) -- Reference model

1.2.5 AC/324-D(2012)0003, 08 Aug 2012, Archives Committee - NATO Strategy for Long Term Preservation of Digital Information, [NU]

1.3 SHAPE Tasker on Archiving of ISAF Records

1.3.1 SH/DOM/IKM/CSP-304787, 25 February 2014, ARCHIVING OF ISAF RECORDS, [NURI]

1.4 Revision of CUR Timeline and Phasing

1.4.1 NCIA/DSO/2014/10909S, dated 25 August 2014, CRISES RESPONSE OPERATIONS URGENT REQUIREMENT (CUR) 1722-2014-COMMANDS-RS: ARCHIVE OF RECORDS (Request for Revision of CUR Timeline and Phases), [NUI]

1.4.2 SH/CCD J6/CISOP OPS/274/14-307226, 8 Sep 2014, CRISES RESPONSE OPERATIONS URGENT REQUIREMENT (CUR) 1722-2014-COMMANDS-RS: ARCHIVE OF RECORDS (SHAPE Response to Request for Revision of CUR Timeline and Phases), [NRI]

2 Background

2.1 Source CUR

2.1.1 ACO submitted the Crisis Response Operations Urgent Requirement (CUR) at Reference [1.1.1], for support the SACEUR OPLAN at Reference [1.1.2], in order to deliver technical and procedural solutions for archiving operational data and (re)use of information, in line with the Directive at Reference [1.1.3], before the end of ISAF Mission.

2.1.2 The CUR - Section 1 has been validated, as a Minimum Military Requirement (MMR), by the SHAPE Crisis Management Requirements Board (CMRB) on 09 July 2014, Reference [1.1.4], and categorized as "MISSION CRITICAL".

2.1.3 NCI Agency has been appointed as Host Nation for the requirement.

2.1.4 NCI Agency has estimated the cost of these works at EUR 2,500,000 and requested advance planning funds, Reference [1.1.5], in the form of advance Project Service Costs to develop a price proposal to provide technologies and sustainable lifecycle capability in line with the requirements defined in CUR. The APF requested is EUR 75,000 (3% of the estimated investment costs).

2.1.5 NCI Agency received an authorization, at Reference [1.1.6], for Advanced Planning Funds (APF) to perform required analysis and submit a TBCE.

2.2 Project context

2.2.1 ISAF mission situation

2.2.1.1 ISAF has generated records since 2002 and while records management principles have been followed in theatre, no ISAF records have been systematically transferred outside theatre into the ACO Chain of Command in accordance with the Directive on the Management of Records on Operational Deployment (Ref. 1.2.1).

2.2.1.2 Subsequently, in order to provide an accurate record about the activities performed by NATO during the operations in the Theatre and, as part of the overall ISAF drawdown, operational information and records must be transferred up to Joint Force Command Brunssum (JFCBS).

2.2.1.3 The applicable Directives (Ref. 1.2.1. and 1.2.2) direct that Active operational records that no longer have immediate administrative, operational and/or technical utility become Semi-Active, and are retained for a specific period of time (5 years) in order to meet business responsibilities. Inactive ISAF records of permanent value are to be transferred to the NATO Archives

2.2.1.4 ISAF records are held in a wide range of both paper and electronic/digital formats (e.g.: doc, pdf, mp4 etc..) and in a multitude of systems (e.g.: Document Handling System, NATO Intelligence Toolbox, shared drives, email systems and Joint Chat). However, it has been confirmed via a Request for Information (RFI) to SHAPE IKM that physical records are not in scope for CUR-1722 and will be dealt with through standard NATO Records Management and Courier procedures.

2.2.1.5 The ISAF HQ Information Management (IM) systems are currently operating sub-optimally and require maintenance. The systems require periodic operator maintenance to keep them operating optimally.

2.2.1.6 In Theatre there are also records that are uniquely held in national extensions to the Afghanistan Mission Network (AMN). These records will remain in these extensions, be repatriated to the specific NATO Nation and will remain under the custodianship of the relevant Nation until transferred to NATO, in accordance with the AMN JMEIs.

2.2.1.7 At Ref. 1.3.1 ACO issued a tasker to HQ JFC Brunssum and HQ ISAF on the subject of Archiving of ISAF Records. This identified the overarching process and responsibilities such that all the records are identified, collected, transferred out of theatre, stored, organized and disposed of correctly.

2.2.1.8 HQ ISAF IM Working Group (IMWG) has planned and initiated actions to remove irrelevant material from the IHQ Document Handling System, SharePoint Portal and Network Shared Drives. Remaining items will be identified and appropriately marked for continued current use in ISAF, future use in Resolute Support and or inclusion in the post-mission ISAF archive.

2.2.2 NATO Archives situation.

2.2.2.1 There is no central digital NATO archiving system yet in place to receive and preserve the digital operational records.

2.2.2.2 There are no fielded NATO tools in for converting, labelling and storage of records for archiving purposes.

2.2.2.3 The NATO Long Term Preservation Strategy published in 2012, Ref. 1.2.5, is to have a digital archival and long term preservation capability for NATO by 2017 and then it will continually develop the archiving processes, submission profile and standards as an enduring task.

2.2.2.4 NATO HQ is implementing Trusted Digital Repository and Long Term Preservations Solution beginning with the first phase, procurement, in late 2014.

3 Operational Requirements

3.1 Purpose

3.1.1 The purpose of the project is to enable the preservation of the ISAF Operational Record. This includes the securing and transfer of digital records of value, in all forms, out of Theatre by End of Mission (EOM), the management and organization of the digital records during the five-year semi-active phase, and to transfer those digital records of Permanent Value to NATO on to the NATO Archivist for long-term preservation, once the records are deemed inactive.

3.1.2 Records created during the ISAF mission and currently held in theatre are to be identified, collected, stored and disposed of in accordance of NATO governance in order to provide an accurate record of NATO's activities of operations in ISAF.

3.1.3 ISAF records no longer in theatre and those under National Custodianship that are of Permanent Value to NATO will similarly and eventually be transferred to the NATO Archivist once appraised and deemed inactive and of permanent value.

3.1.4 All ISAF records will be processed through 5 stages: Identify, Collect, Transfer, Organise and Dispose as defined by the SHAPE Tasker (Ref 1.3.1). Figure 1 presents an initial breakdown of the high level activites accross the information lifecycle as the records progress from active to semi-active state, and then on for long-term preservation.

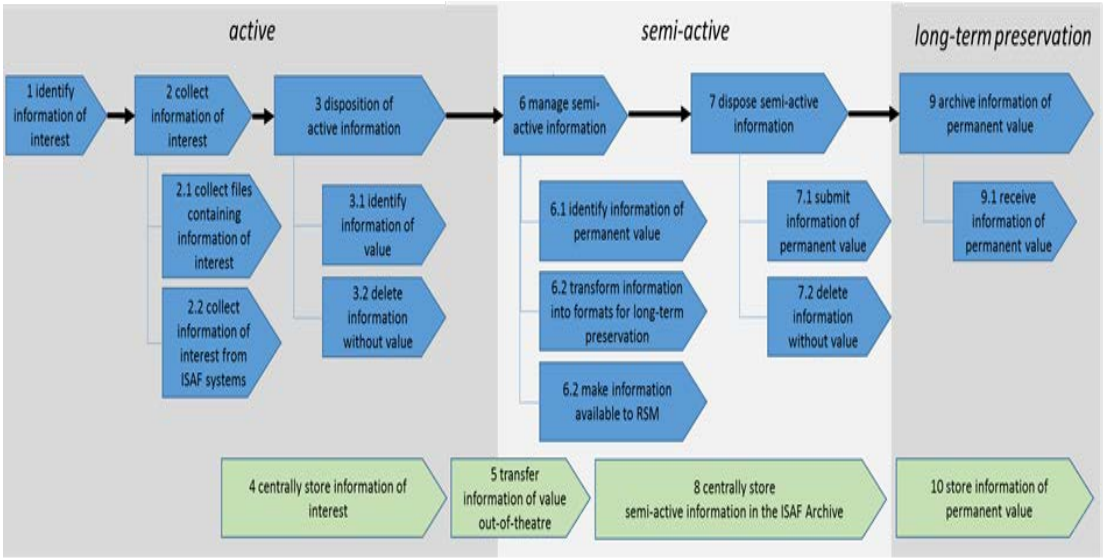

Figure 1, NOV-5: High Level Activities Across Information Lifecycyle Stages

3.1.4.1 ISAF records are to be identified and qualified from their current sources for the retention of records of Temporary Value for the Semi-Active phase for 5 years after ISAF EOM.

3.1.4.2 ISAF records are to be centrally collected in Theatre and prepared for transfer out of Theatre . JFCBS and HQ ISAF have the responsibility for the Identification and Collection of ISAF Records

3.1.4.3 ISAF records are to be transferred though assured and managed mechanisms out of theatre and extracted from ISAF systems (services) into the ISAF Archive whilst in Semi-Active state before final disposition to NATO Archive Services.

3.1.4.4 Custodianship of ISAF records are to be transferred from ISAF to JFC Brunssum . Final transfer on to the NATO Archivist for ISAF records of Permanent Value to NATO will take place after the Semi-Active period (EOM + 5 years).

3.1.4.5 ISAF records are to be managed by JFC Brunssum in the ISAF Archive of semi-active records for qualification, appraisal and preparation for final disposition or transfer to NATO Archive Services.

3.1.4.6 After five years ISAF records, once qualified for final disposition will be safely destroyed or transferred to NATO Archive Services and the NATO Archivist.

3.1.5 The project will support collaboration and ensure coordination with relevant IKM, Archivist and project stakeholders, both in-theatre and out-of-theatre.

3.1.6 The project will use existing resources (and capabilities), such as the AMN European Point-of-Presence, or re-rolling equipment released during draw-down of the Afghan Mission Network, to support the final solution where it is appropriate.

3.1.7 The project will ensure access to ISAF Operational Records is provided to the relevant users, both in-theatre and out-of-theatre, during the Semi-Active period (EOM + 5 Years). Access to Semi-Active records stored as system-independent files will be available in real-time. Access to Semi-Active records stored in their originating Functional Area System or ISAF Appication is to be provided within 8 working hrs/1 working day.

3.1.8 The project will provide sufficient additional storage capacity, both in-theatre and out-of-theatre, to collect, store and manage ISAF records by ISAF EOM and until final disposition or transfer to NATO Archive Services and the NATO Archivist (EOM + 5 Years).

3.2 Requirements

3.2.1 Intended Use

3.2.1.1 The project will support the managed, safe, timely and assured transfer and migration of ISAF operational records into the ISAF Archive.

3.2.1.2 The project will support the detection and repair/removal of corrupted common text, audio and video file formats and malware.

3.2.1.3 The project will support the scheduled and prioritised transfer out-of-theatre of all ISAF records of Temporary and of Permanent Value to NATO, up to and by ISAF End of Mission (EOM), including ISAF systems storing ISAF records that cannot be exported.

3.2.1.4 The project will support the transfer of all types of ISAF digital operational records, including Training, Procedural, Development, Support and Personnel records.

3.2.1.5 The project will support the transfer of Custodianship of ISAF records from HQ ISAF to HQ JFC Brunssum, including the verification of data transfer in line with Information Assurance requirements of HQ JFC Brunssum.

3.2.1.6 The project will support the management of in-theatre copies of ISAF records' and ISAF systems' metadata in readiness for transfer to the out-of-theatre ISAF Archive.

3.2.1.7 The project will provide a Trusted Digital Repository as part of the ISAF Archive repository of semi-active ISAF records.

3.2.1.8 The project will support the management of the ISAF Archive, its information, metadata, configuration and dependencies by providing the necessary tools, services, capabilities and technical manpower to the JFCBS HQ Archivist and Team.

3.2.1.9 The project will support the management and catalogue of ISAF records' and ISAF systems' metadata.

3.2.1.10 The project will support managed and planned access to ISAF records held in ISAF systems until such time all records have been migrated out of the host systems into the ISAF Archive.

3.2.1.11 The project will provide the capabilities, services and training to the JFCBS Archives team for the transfer, conversion and translation, extraction and management of ISAF records from common text, audio and video file formats and structured content (databases) into standardised archival forms.

3.2.1.12 The project will provide the capabilities, services and training to the JFCBS Archives team for thecleansing, consolidation, (de)normalisation and deduplication of ISAF records.

3.2.1.13 The project will provide the capabilities, services and training to the JFCBS Archives team for themanagement of requests for ISAF records.

3.2.1.14 The project will support the Search and Discovery of ISAF records, content and data by authorised users.

3.2.1.15 The project will support the Publication and Dissemination of notifications, query responses, ISAF records and ISAF systems and their metadata.

3.2.1.16 The project will technically support HQ JFC Brunssum in the analysis, qualification and identification of ISAF records of Temporary and of Permanent Value to NATO.

3.2.1.17 The project will provide monitoring and audit functions to support efficient, effective and traceable Preservation activities and solution compliance to NATO governance and standards.

3.2.1.18 The project will support ongoing customisation of Preservation strategies, standards and activities.

3.2.1.19 The project will support user accounts and secure, role-based access to ISAF records and functionality.

3.2.1.20 The project will support multiple user roles, including Custodian and Systems Administrator.

3.2.1.21 The project will support the Backup of ISAF records, content and data and Disaster Recovery of services and functionality.

3.2.1.22 The project will support the final disposition of ISAF records of Temporary Value and transfer the Custodianship of ISAF records of Permanent Value from HQ JFC Brunssum to NATO Archivist (Archive Services).

3.2.2 Interoperability

3.2.2.1 The project will support interoperability with similar services in the deployed and federated domains, through clearly defined interfaces based on NATO standards and profiles (Annex 1 to Ref. 1.2.2 Directive on the Preservation of NATO Digital Information of Permanent Value) and agreed open standards and reference models (Ref. 1.2.4 ISO 14721:2012).

3.2.2.2 The project will support interoperability and interconnectivity with NATO Archive Services, specifically the future NATO HQ Long Term Preservation Solution once it has been implemented.

3.2.2.3 The project should support the federated search of ISAF records, content and data by authorised users and systems.

3.2.2.4 The project should support the definition and development of interoperable archive interfaces to specific NATO/ISAF systems, including Functional Area Systems (FASs), through the use of Commercial-Off-The-Shelf (COTS) or bespoke connectors. Those systems currently identified are listed in the (non-exhaustive) Annex B – Systems that contain ISAF Operational Records.

3.2.2.5 The project should leverage existing border protection and cross domain services where these offer mechanisms for information exchange across NS Operational Network and ISAF MS Network security domains.

3.2.3 Modes of operation

3.2.3.1 The technical solution will support all modes of operation including peacetime, crisis, and exercise, from the static locations through network connectivity.

3.2.3.2 The technical solution will support online and remote access to ISAF records by authorised users.

3.2.3.3 The technical solution will support the management of ISAF records, content, data and of the solution itself by authorised users.

3.2.3.4 The technical solution will support the maintenance of ISAF records, content, data and of the solution itself by authorised users.

3.2.3.5 The technical solution will support the protection of the solution, its information and ISAF records, content and data through safeguards and effective Identity and Access Management of authorised users to information.

3.2.3.6 The technical solution will support the assured upload, transfer and archiving of ISAF records from or to existing repositories and systems (services) by authorised users.

3.2.3.7 The technical solution will support capacity preserving mechanisms for de-duplication and compression if applicable.

3.2.3.8 The technical solution will support analysis and reporting of ISAF records, content and data and of the performance of the solution by authorised users.

3.2.3.9 The technical solution will support search and discovery over ISAF records, content and data by authorised users.

3.2.3.10 The technical solution will support the dissemination and delivery of ISAF records, content and data to authorised users.

3.2.3.11 The technical solution will support integration and federation of services with other systems (services).

3.2.4 Non-functional requirements

3.2.4.1 Security

3.2.4.1.1 The project will ensure the security of the solution and ISAF records through the use of safeguards, border protection and effective Identity and Access Management in accordance with agreed SLAs.

3.2.4.1.2 The project will follow applicable Security Directives Guidelines and Security and Evaluation Agency (SECAN) Doctrine and Information Publications (SDIP) as laid down in the “NATO Office of Security Roadmap”

3.2.4.1.3 The project will support the NS Operational Network and ISAF MS Network.

3.2.4.1.4 The project will provide the required security documentation (e.g. Security Accreditation Plan) to NSAB to support the existing AFPL security accreditation process.

3.2.4.1.5 The project will support Security Risk Assessments to identify and mitigate security risks and threats.

3.2.4.2 Performance

3.2.4.2.1 The project will ensure the performance of the solution in respect of Key Performance Indicators (KPIs) and measures in accordance with agreed SLAs.

3.2.4.3 Scalability and sizing

3.2.4.3.1 The project will ensure the managed capacity of the solution to support managed growth and efficient use of available storage services in accordance with agreed SLAs.

3.2.4.3.2 The project will ensure the extensibility (function) of the solution to support managed integration and addition of services throughout the lifetime of the solution in accordance with agreed SLAs.

3.2.4.3.3 The project will ensure the scalability (scale-up and scale-out) of the solution to support managed change throughout the lifetime of the solution and in accordance with agreed SLAs.

3.2.4.3.4 The project will ensure the interoperability of the solution to support greater extensibility through the integration and federation of systems (services) in accordance with agreed SLAs.

3.2.4.3.5 The project will ensure the reusability of the solution by other systems (services) through interoperability in accordance with agreed SLAs.

3.2.4.4 Reliability and availability

3.2.4.4.1 The project will ensure the availability of the solution in respect of system availability measures in accordance with agreed SLAs.

3.2.4.4.2 The project will ensure the reliability of the solution in respect of the delivery of assured service functionality and survivability in accordance with agreed SLAs.

3.2.4.5 Maintainability

3.2.4.5.1 The project will ensure the maintainability of the solution in accordance with predefined requirements, agreed SLAs and NATO Maintainability standards.

3.2.4.5.2 The project will ensure the manageability of the solution in respect of managed (configuration and release of) changes in accordance with agreed SLAs.

3.2.4.5.3 The technical solution will be supported and maintained by NCI Agency throughout the lifetime of the project.

3.2.4.6 Survivability

3.2.4.6.1 The project will ensure the resilience of the solution including both physical and virtual resources by providing sufficient system redundancy to deliver uninterrupted and survivable services.

3.2.4.7 Environmental requirements

3.2.4.7.1 There are no special environmental needs or requirements for the infrastructure hosting. Existing infrastructure in the AMN Kabul Cluster[1], at the AEP and NS AIS will be employed to host the additional storage and virtual machines and is assumed adequate capacity is already available.

3.2.4.7.2 NATO courier transport used to transfer the records will need to handle the storage devices as a fragile parcel as the equipment will be vulnerable to extensive vibrations / G forces.

3.2.4.8 Compliance

3.2.4.8.1 The project will ensure compliance with NATO Policies, Directives, Standards and Guidance in respect of the management of Information, Information Assurance, Security, Interoperability, Records and Archives.

3.2.4.8.2 The project will ensure the compliance of the solution in respect of delivery upon functional and non-functional requirements and agreed SLAs.

3.2.4.8.3 The project will ensure the testability of the solution to support the safe and managed release of changes over the lifetime of the solution in accordance with agreed SLAs.

3.2.4.9 Usability

3.2.4.9.1 The project will ensure the usability of the solution in respect of user requirements and in accordance with agreed SLAs.

3.2.4.9.2 The project will ensure usability, ease of access and reuse of ISAF records throughout the lifetime of the solution.

3.2.4.9.3 The project will provide documentation and guidance on the use of the solution.

3.2.4.9.4 The project will support the viewing and rendering of ISAF records, content and data in human-readable form.

3.2.5 Constraints

3.2.5.1 Export & Transformation

3.2.5.1.1 ISAF records, content and data exist in a multitude of file formats, in structured data (databases) and unstructured data (emails, messages, etc.) and therefore mechanisms are required to extract and transform this

[1] The Kabul Cluster – The main CIS hub for future RS mission. Incorporates distributed CIS services across (using current naming) ISAF HQ and KIA(N).

information into standard archival forms.

3.2.5.1.2 ISAF systems (services) include both NCI Agency FASs and ISAF developed/procured systems which currently and largely do not provide mechanisms to export and transform embedded ISAF records into standard archival forms and therefore require a combination of bespoke development and standard COTS connectors to support.

3.2.5.2 Network Connectivity & Manual Transfer

3.2.5.2.1 The current volume of ISAF records and ISAF systems (services) to be transferred by ISAF EOM is estimated in the range of 115-150TB.

3.2.5.2.2 The current Network infrastructure and resources for the AMN Euro Point-of-Presence (AEP) is limited. Of the total available capacity of 50-65 TB, Secure Satcom Bandwidth allocated for replication of data from Theatre to the European Pont of Presence is limited to 6Mbps.

3.2.5.2.3 a dataset of 1 TB could be transferred in approximately approx. 16 days using this bandwidth, assuming dedicated availability (which is not the case) and zero errors due to system outages Based on these assumptions, and an estimate range of 115-150 TB of data, transfer would take between 1774 and 2314 days to complete (between 4.9 and 6.3 years).

3.2.5.2.4 The VIASAT Eclypt (encrypted hard-disk) is the current ISAB approved solution for secure data transfer.

3.2.5.2.5 This solution has a maximum capacity of 1TB

3.2.5.2.6 It is estimated to take 24-30 hours per TB to transfer data on and off the VIASAT Eclypt hard drive using the USB interface, assuming no errors during transfer.

3.2.5.2.7 VIASAT Eclypt hard drive requires 3 USB interfaces simultaneously on the connected system for the transfer. Standard NATO Servers have 4 USB ports, and thus can only support one transfer at a time.

3.2.5.2.8 The AEP has three servers that can be employed for transfer at any point in time. The transfer of 115-150TB using VIASAT Eclypt hard drives would take in the order of 48-62 days continuous transfer (assuming no errors)

3.2.5.2.9 The time to manage and split 115 to 150 TB of data into 1TB chunks; locally transfer each TB onto an Eclypt hard drive, courier out of theatre; transfer the data onto a final destination and validate the data is estimated in the order of 7-12 days per TB.

3.2.5.2.10 The estimated total volume of 115-150TB may potentially be reduced through the application of deduplication and compression technologies. The

applicability and effectiveness of these techniques is highly dependent on the storage technology available, and also may be negated by the need to apply checksums on the content for Information Assurance.

3.2.5.2.11 For 115 to 150 TB this would require significant manpower and investment in order to undertake parallel transfers to ensure all data is transferred before EOM.

3.2.5.3 Storage Capacity

3.2.5.3.1 Current storage capacity in-theatre to support the collection and staging of ISAF records for transfer out of theatre and to support other ongoing EOM activities are insufficient to support the volume of ISAF records and ISAF systems (services) by ISAF EOM – estimated between 115 and 150TB total. This therefore requires urgent in-theatre uplift of dedicated storage capacity in coordination with the final transfer strategy out of theatre.

3.2.5.3.2 Current storage capacity out-of-theatre (NS & MS) are insufficient to support the volume of ISAF records and ISAF systems (services) for hosting and their subsequent management which therefore requires urgent uplift of enhanced and dedicated storage capacity out-of-theatre in advance of the ISAF Archive solution to be procured.

4 Current Capabilities

4.1 Existing Capabilities & System(s)

4.1.1 A sub-set of critical and non-critical ISAF systems (services) which currently host ISAF records could be used to support collection and transfer out of theatre, directly from source. E.g. The Advanced Personnel Management System already maintains the authoritative data in the AEP in Europe, and replicates the Data to NS AIS. Those systems currently identified are listed in Annex B – Systems that contain ISAF Operational Records.

4.1.2 There are numerous network file-shares on the AMN which could be used to support collection and transfer out of theatre, direct from source. However since August 2013 HQ ISAF and IJC IKM have reported that these are at or are reaching capacity, or are being rebrigaded as part of the preparations for RS.

4.1.3 Decommissioned KAF storage capacity is being re-brigaded to HQ ISAF, providing 70TB of dedicated storage capacity for the collection of ISAF records for transfer out of theatre.

4.1.4 AEP (AMN European Point-of-Presence) has provisionally identified 50-65TB long term storage capacity to host transferred ISAF records and systems (services) out-of-theatre, with a temporary surge capacity of up to 80TB.

4.1.5 Bi-SC AIS (Bi-Strategic Command Automated Information System) has no available storage capacity to host transferred ISAF records or systems (services) out-of-theatre.

4.1.6 FASs and systems (services) are largely hosted on Virtual Machine (VM) infrastructure, supporting the bulk transfer of whole systems (and their configuration) out of theatre, facilitating their more immediate stand-up on European-based infrastructure and time-to-access ISAF records in those systems.

4.1.7 Databases contain the majority of ISAF records hosted in FASs and systems (services), which could be transferred instead of Virtual Machine images thereby reducing storage capacity requirements for transfer out of theatre. However this would require effort to re-establish the originating FAS/system in the AEP from scratch, requiring significant system knowledge and effort from the system SMEs to rebuild the systems.

4.1.8 IJC IKM has 10x 1TB and 10x 500GB hard-disks providing a total of 15TB removable storage capacity for in-theatre transfers and transfer out of theatre, which could support batched transfer although requiring more man-power costs to manage and courier.

4.1.9 AEP has 4x 1TB and is procuring (in-time) 10x 1TB hard-disks providing a total of 14TB removable storage capacity for transfers out of theatre, which could also be used to support batched transfers although also requiring more man-power costs.

4.1.10 There is theatre-to-out-of-theatre network connectivity to AEP of 6Mbits/s, which could be increased using existing infrastructure if network activity were prioritised and controlled.

4.2 Weaknesses of Existing Capabilities & System(s)

4.2.1 There is no documented or controlled process for the management and transfer of ISAF records in/out of theatre.

4.2.2 The lack of an exhaustive set of specifications of what constitutes an operational record may affect the assurance of their comprehensive capture and transfer and therefore also of the storage capacity requirements both in-theatre and out-of-theatre.

4.2.3 There is no coherent metadata specification or mapping of metadata between systems (services) with which to effectively manage ISAF records (and their metadata) for transfer and management out of theatre.

4.2.4 Out-of-theatre storage capacity is insufficient to support the projected volume of ISAF records and systems (services) to be transferred out of theatre and subsequent management for 5 years following ISAF EOM.

4.2.5 NATO HQ Archiving Services are being updated and the long term digital archive and preservation solution is not yet procured or ready to support the management and final disposition of ISAF records. Thus there is insufficient information on the technical solution, profile, and interface specification we need to comply with for the disposition phase of the activity.

4.2.6 Collecting (staging) ISAF records within the authoritative ISAF systems (services) currently hosting them depends upon their current available storage capacity. This ranges from 20%-40% for most systems and this is considered insufficient to both stage records and support ongoing operational use for ISAF and the follow on RS mission. Therefore separate and dedicated in-theatre storage capacity is required to collect ISAF records for transfer without impacting operational ISAF systems, networks and activities.

4.2.7 Some ISAF systems and networked file-shares have already been decommissioned or are soon to be decommissioned requiring dedicated in-theatre storage capacity for the period up to and including ISAF EOM.

4.2.8 FASes and systems (services) hosting ISAF records by and large do not provide mechanisms for the identification and export of ISAF records into standard file types and archival forms, which will either require using point-in-

time system snapshots, the procurement of COTS, development of bespoke tools/FAS enhancements or specific analysis and data extraction in cooperation with the FAS SMEs.

4.2.9 Accessing operational ISAF systems (services) directly to extract and transfer hosted ISAF records may pose a risk to current ISAF operations and therefore direct access should be avoided and activities constrained out-side of peak times and planned operational activities.

4.2.10 Transferring ISAF records directly from operational ISAF systems (services) and network file-shares would severely impact the network availability and capacity and those operational ISAF systems dependent upon it thereby posing unacceptable risk to current ISAF operations and therefore should only be transferred across ISAF network infrastructure constrained out-side of peak times.

4.2.11 The Theatre-to-out-of-theatre network bandwidth and availability is currently both insufficient to address projected volumes for transfer and other operational activities which would contest (compete) with the network transfer of ISAF records out of theatre.

4.2.12 Use of encrypted removable storage are currently limited to 1TB hard-disks which, given projected volumes for transfer, would require numerous devices, labour-intensive batch processed and time consuming activities to support the in-theatre collection and subsequent transfer of ISAF records out of theatre.

4.2.13 Removable storage does not include data deduplication and compression capabilities out of the box. Mass storage devices (rack mounted hard-disks) provide greater opportunity to support this and therefore in reducing labour intensive activities for management and deduplication and for reduced storage requirements.

4.2.14 Use of unencrypted-mass storage devices (rack mounted hard-disks) require additional measures such as software encryption, and waivers from the NATO INFOSEC Community to support their safe and secure transit/carriage out of theatre, in accordance with NATO and ISAF Security policies and directives.

4.2.15 Transferring FASs and systems (services) hosting ISAF records are more efficient and effective for subsequent verification/validation and setup for access to ISAF records but require increased storage to transfer and to host in Europe.

4.2.16 Transferring databases hosting ISAF records are more efficient and effective in terms of required storage capacity but would incur increased labour costs for subsequent verification/validation and system setup activities in Europe to facilitate access to ISAF records.

4.3 Consequences of Not Delivering the Required Capabilities

4.3.1 Failure to deliver dedicated storage (and backup) capacity in-theatre may result in:

a) adverse impacts to ISAF operations and systems (services) due to archiving activities.
b) inefficient use of existing and critical technical infrastructure as archiving activities span multiple systems and networks.
c) limited capabilities for the management and assurance for the identification and collection of ISAF records for transfer by ISAF EOM.
d) loss of ISAF records during collection and transfer.
e) limited opportunity for bulk transfer of ISAF records.
f) no opportunity for reuse of mass storage out-of-theatre.

4.3.2 Failure to deliver dedicated storage capacity out-of-theatre may result in:

a) inefficient or ineffective management and assurance of ISAF records out-of-theatre.
b) waste or less efficient use of time and effort to support the management, verification/validation and access to ISAF records out-of-theatre.
c) loss of ISAF records.
d) limited support for future mission records during the 5 years following ISAF EOM.

4.3.3 Failure to deliver managed processes and procedures for the transfer and management of ISAF records may result in:

a) inefficient use of existing capabilities, resources and technical infrastructure.
b) poor assurance over ISAF records and procedures to identify, collect, transfer, organise and dispose of them.
c) inefficient use of time and effort of on-going archiving activities.
d) loss of ISAF records.

4.3.4 Failure to deliver capabilities to support the export and translation of ISAF records from FASs and systems (services) may result in the need to archive whole systems (services) or risk the loss of ISAF records.

4.3.5 Failure to deliver a specification of ISAF records, their metadata and agreed archival forms may result in the loss or mismanagement of ISAF records.

4.3.6 Failure to transfer the records by EOM may result in the unplanned use of the storage and backup resources dedicated to the to the RS Mission, reducing the planned operational capability.

5 Business Case

5.1 Assumptions

5.1.1 ACO has submitted a Mission Critical CUR 1722-2014-COMMAND-RS: ARCHIVE ISAF RECORDS. (Ref 1.1.1) to deliver technical and procedural solutions for archiving operational data and (re)use of information before the end of ISAF Mission (31 December 2014).

5.1.2 Full scope of the CUR is not deliverable in the stated timeline and therefore we propose (Ref 1.4.1) that the full implementation of the CUR 1722-2014 be staged and a revised schedule agreed to accommodate a blended implementation. At Ref. 1.4.2 ACO J6 confirmed their acceptance of a phased approach to the CUR and provided guidance on the revised timelines.

5.2 Options considered

5.2.1 To provide this capability two options have been considered:

5.2.1.1 Compete a contract for a solution through AOM ICB (International Competitive Bidding).

5.2.2 Leverage existing contracts, AOM ICB and services from suppliers and NCI Agency: the solution for infrastructure services to be sole-sourced to Thales (France) and Telindus NV (BE), for the in-theatre and out-of-theatre infrastructure elements. To leverage NATO enterprise software agreements for the software elements and sole source for the Eclypt encrypted removable storage. Targeted use of IES (Internal Engineering Support) for key NCI Agency engineering expertise and services for knowledge and schedule critical tasks.

5.3 Recommended option

5.3.1 The Host Nation recommends the second option, to mitigate the challenging schedule and de-conflict dependencies and delays with other RS related CURs and activities.

6 Proposed Implementation

6.1 Target Architecture

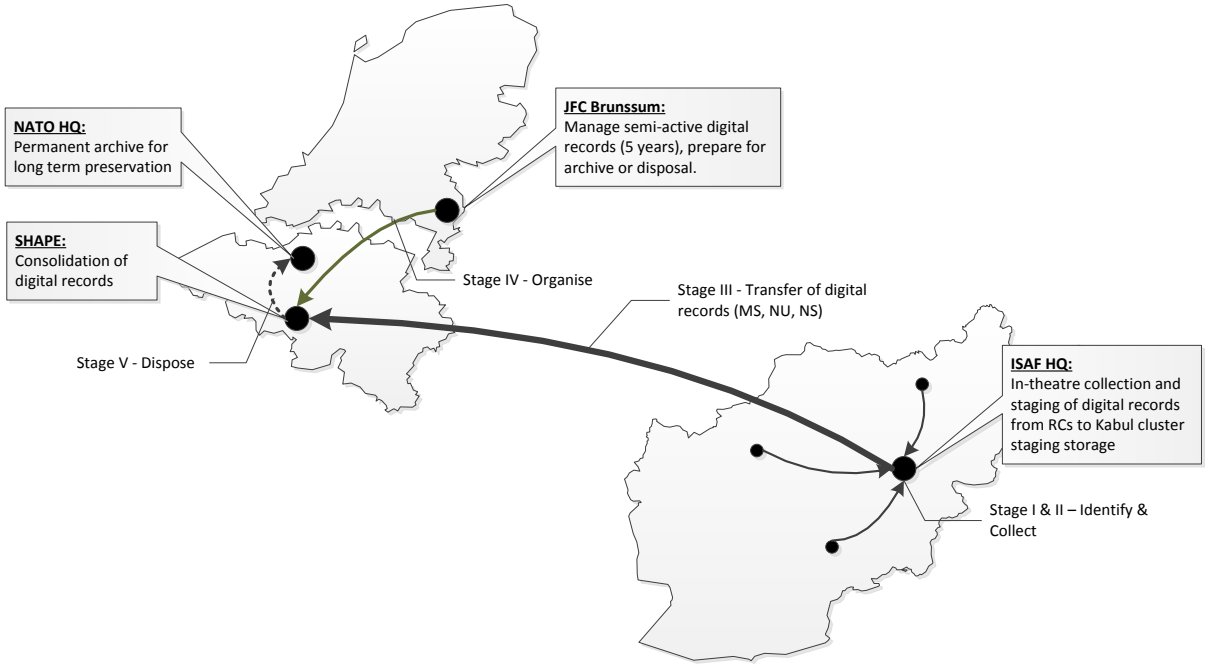

Figure 2, NOV1 – Nodes and Stages

6.1.1 The capability for the identification, collection, and transfer of data consists of three major physical components for collecting data:

(1) An in-theatre staging repository on the MS network (Kabul Cluster)

(2) An out-of-theatre intermediate store on the MS network (AEP), and

(3) An out-of-theatre temporary storage area and an archive for semi-active records (SHAPE campus) on the NS network (AIS).

6.1.2 The in-theatre staging repository on the MS network will be located in Kabul. 70TB of data storage will be available at ISAF HQ starting 1 October 2014 built on equipment relocated from KAF. Reference [1.1.9].

The out-of-theatre intermediate store on the MS network provided at the AEP currently has between 50TB and 65TB of available data storage that could be dedicated to the archive. The capacity of this store has to be extended to allow the transfer and consolidation of all in-theatre MS data.

There currently is no staging area for the consolidation of all MS, NU, and NS data available on the NS (AIS) network. There also is no archive for semi-active records available at JFCBS.

Figure 2 provides a high-level solution overview. The major components of the capability. A set of annotated sequence diagrams showing the individual steps of the data transfer from theatre to the archive is included in Annex C.

6.1.3 For MS data there are three means of transferring data between the in-theatre staging area and the out-of-theatre intermediate store and repository:

(1) By online storage or application level replication through an existing link to the AEP,

(2) By physical transfer via encrypted external hard drives,

(3) By bulk transfer of the entire content of the in-theatre staging area.

6.1.4 NU data can be transferred to the out-of-theatre staging area by using the AEP or via external hard drives.

6.1.5 NS data will be transferred to the out-of-theatre staging area via the NS network or via physical media using NS handling procedures.

6.1.6 Moving physical records from theatre to semi-permanent storage is out-of-scope for this project.

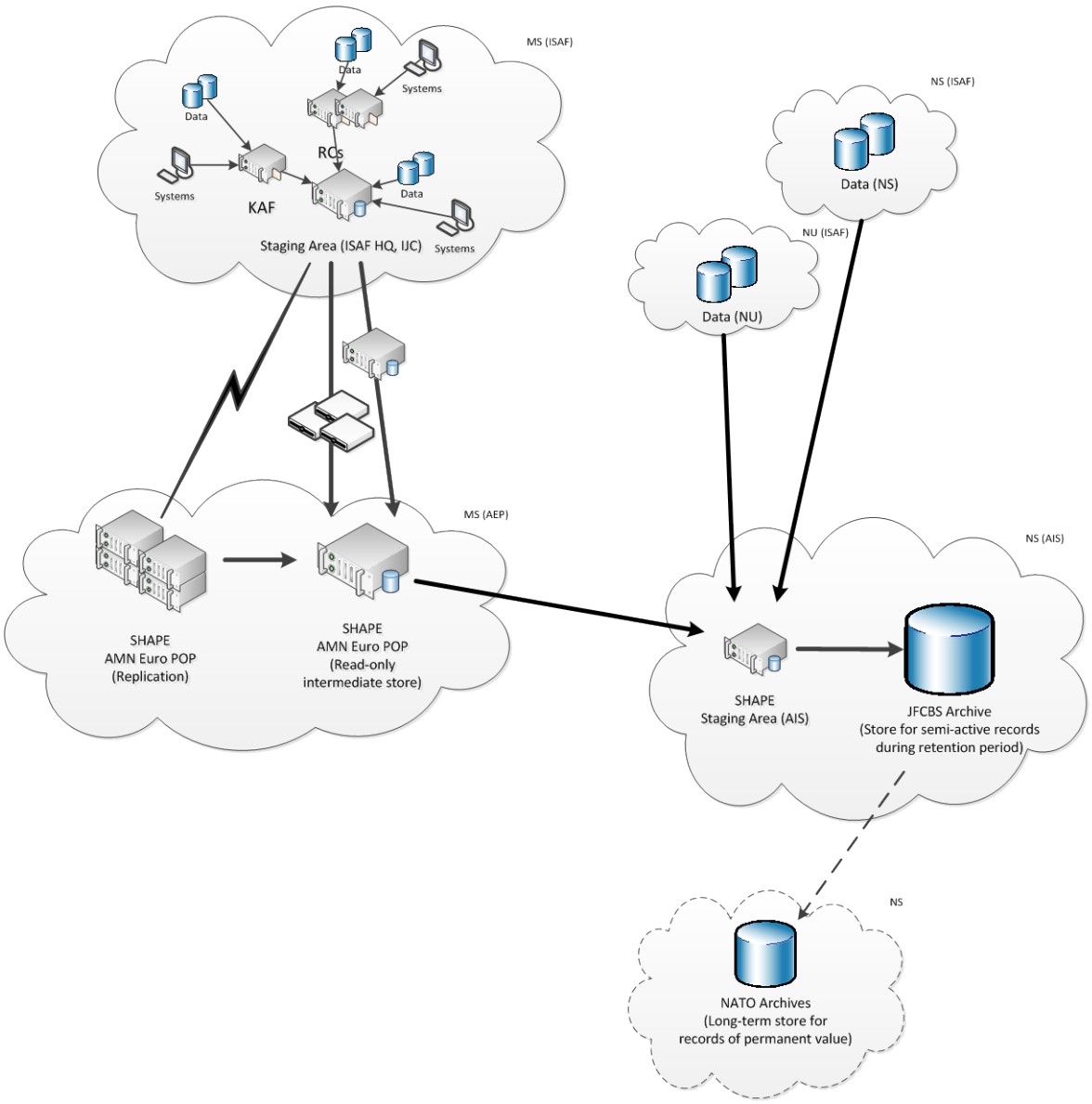

Figure 3, Solution Overview

6.1.7 The high-level extended RACI matrix for this target architecture, based on the main tasks, is shown below (R – Responsible, A – Accountable, S – Support; C – Consulted; I – Informed).

#	Tasks	Stakeholders			
		HQ ISAF	**HQ JFCBS**	**NCI Agency**	**ACO**
1	Setup of in-theatre staging area (MS records)	CI	I	R	A
2	Consolidation of in-theatre records for transfer (MS, NU, NS records)	R	SI	CI	A
3	Setup of replication area at AMN Euro POP (MS records)	CI	I	R	A
4	Transfer via replication from in-theatre staging area to AMN Euro POP (MS records)	R	I	R	A
5	Setup of out-of-theatre AMN Euro POP Intermediate Store (MS records)	CI	I	R	A
6	Transfer via portable drives from in-theatre staging area to AMN Euro POP Intermediate Store (MS records)	R	I	R	A
7	Transfer via bulk uplift from in-theatre staging area to AMN Euro POP Intermediate Store (MS records)	R	I	R	A
8	Consolidation of transferred records at AMN Euro POP Intermediate Store (MS records)	SC	SI	R	A
9	Transfer (internal) from AMN Euro POP replication to Intermediate Store (MS records)	I	I	R	A
10	Setup of out-of-theatre AIS Staging Area (MS, NU, NS records)	I	I	R	A
11	Transfer from AMN Euro POP Intermediate Store to AIS Staging Area (MS records)	I	I	R	A
12	Transfer from in-theatre staging area to AIS Staging Area (NU, NS records)	R	SCI	R	A
13	Processing/management of records at AIS Staging Area (MS, NU, NS records)	SC	R	I	A
14	Setup of ISAF Archive for semi-active records (MS, NU, NS records)	I	SCI	R	A
15	Processing and loading of records into the ISAF Archive from the AIS Staging Area (MS, NU, NS records)	I	R	SCI	A

6.2 Implementation Approach

6.2.1 Project Model

6.2.1.1 A blended project model that uses expertise and services from established suppliers, new suppliers and internal suppliers to mitigate challenging schedules will be used for the implementation.

6.2.2 Project Work Breakdown

6.2.2.1 The project will be broken down into 4 stages as shown in Figure 4:

6.2.2.1.1 Stage 1 work packages are focused on collecting and “repatriating” the ISAF digital operational records in bulk (all datasets prepared by ISAF IKM) by the end of the ISAF mission (end of 2014).

6.2.2.1.2 Stage 2 aims at delivering the ISAF Archive technical solution to reach the Initial Operation Capability, when the first “repatriated” datasets from ISAF can be reviewed, tagged, converted and put in the ISAF Archive. It also covers the interim solution to enable access to the repatriated data despite the lack of the archive repository.

6.2.2.1.3 Stage 3 will prepare the JFCBS Archivists to using the ISAF Archive solution and will support the ISAF digital operational records organizing phase which will ensure full planned archiving performance at the ISAF Archive.

6.2.2.1.4 Stage 4 focuses on supporting the ISAF digital operational records organization phase sustaining the ISAF Archive for 1 year since reaching FOC.

6.2.2.1.5 The JSCBS Archive would remain supported under the O&M arrangements until 5 years after ISAF EOM (end of 2019).

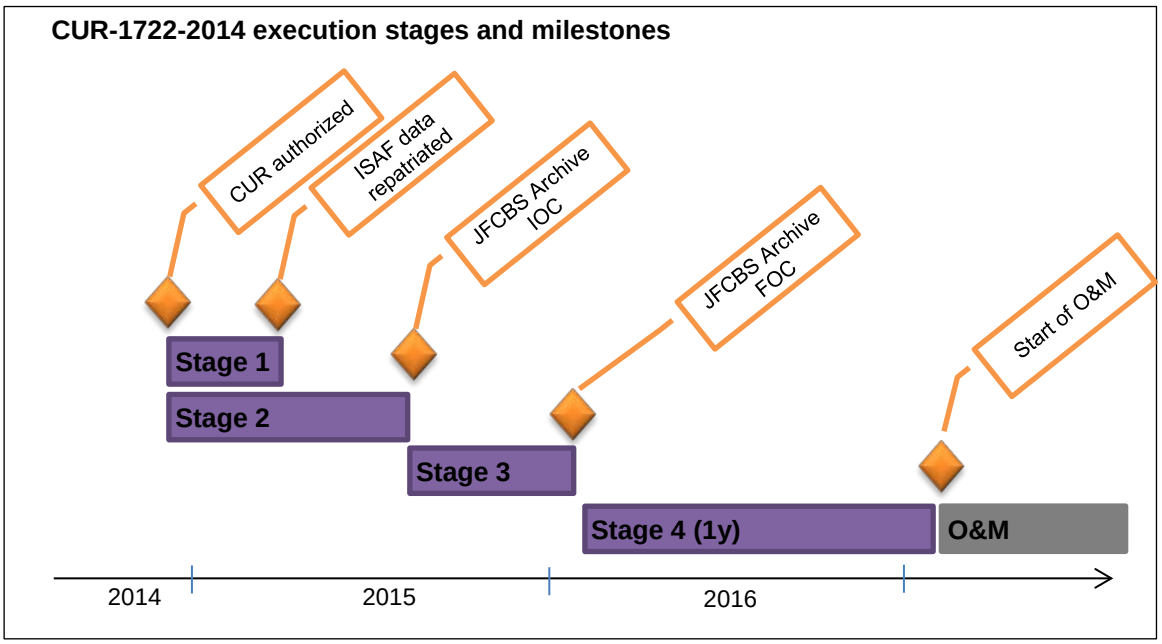

Figure 4, CUR-1722-2014 Execution Stages and Milestones

6.2.2.2 Note that the disposition phase of the ISAF digital operational records including the transfer from the ISAF Archive established in Stage 2 to the future NATO Archive digital repository (Long Term Preservation Repository) is not in scope of this request and will be subject to an additional cost estimate document.

6.2.2.3 Scope of works of each stage is broken down into one or more work packages which gather similar activities grouped by the planned execution model.

6.3 Proposed Work Packages

6.3.1 Stage 1

The stage 1 addresses the urgent need to transfer/repatriate records from the staging area in theatre to the AEP at SHAPE campus which have been already identified and collected by the ISAF IKM teams. This needs to occur before the end of the ISAF Mission and includes the following work packages:

6.3.1.1 WP1 – Priority Procurements (PSC, INV)

The work package shall provide essential equipment and services required to support the data repatriation and access to the assured storage repository for the storage of the digital operational records for: forces departing the AOR, closure of PoPs and the transition of RCs to RS Mission TAACs, namely:

a) Re-use and uplift existing storage services in theatre in the Kabul Cluster for the Staging Repository, supporting the consolidation and de-duplication of data and records from the NU, IS, NS information domains. (INV, PSC).
    i. Uplift IS storage capacity by 100TB

ii. Uplift IS backup storage capacity by 25TB
iii. Uplift NS storage capacity by 25TB
iv. Provide project management, design and engineering support for the implementation of the equipment and services (sourced from CISAF contract).

b) Re-use and uplift existing storage services in Europe at the AMN European PoP (AEP) and the SHAPE datacentre for an Assured Storage Repository to receive and store the repatriated Operational Records and data. (INV, PSC).
   i. Uplift AEP IS storage capacity by 125TB (100TB storage for op record, 25TB storage to spin up server, VM images to validate and access operational record.
   ii. Uplift SHAPE DC AIS NS storage capacity by 100TB
   iii. Provide project management, design and engineering support for the implementation of the equipment and services.
c) Increase the quantity of hardware encrypted mobile storage devices to support the manual collection and transfer of data through the AOR to the staging repository in the Kabul cluster and to the assured storage repository in Europe.
   i. 35 x 1TB Mobile Hard Disks (sourced from the CO-13642-NCIRC)
d) Provide equipment to bulk encrypt volumes of data for physical transfer by courier from the in-theatre staging repository to the assured storage repository in Europe. Note: Accreditable/approvable solution still to be defined.
   i. 1 x Encryption Appliance (HW/SW) (Option)
   ii. 1 x Set of Encryptable Media (Option)

6.3.1.2 WP2 – Support Data Transfer and Validation (IES)

The work package provides essential engineering services to support the extraction of the operational record, its transfer (repatriation) from theatre to the assured storage repository in Europe and its validation to assure its integrity namely:

a) Uplift or extend NCIA CSU ISAF FAS and CES engineering team resources to provide technical support to IKM for the extraction and preparation/packaging of the operational record for transfer,
b) Uplift or extend NCIA CES AEP engineering team resources to provide technical support and operations for the transfer, import, validation, assurance and to provide access for the JFCBS HQ Archivist and team to the operational record on the AEP and SHAPE DC repositories,
c) Uplift or extend CISAF engineering team resources to provide technical support to IKM and operations for the import and transfer of the operational record to the in-theatre staging repository and to the AEP and SHAPE DC repositories,
d) Provide CES, Ops Analysis engineering resources to support IKM with the technical development of updated CONOPS/CONOS,
e) Setup of the network replication routine on top of the existing arrangements between the AEP and theatre (Kabul cluster),
f) Perform three hand-carrying data transfers using the mobile encrypted drives using procedures used by the AEP support team.

6.3.1.3 WP3 – Physical Bulk Data Transfer (INV, IES)

The work package provides the ability to physically repatriate and transport large volumes of data and the operational record from the assured staging repository in Kabul to the European PoP and SHAPE DC using approved methods, namely:

a) Package the ISAF staging storage for transport
b) Transport the ISAF staging storage (NATO courier assumed). The estimated shipping weight is not to exceed 500KG.

6.3.1.4 Stage 1 end-state

At the end of stage 1 all the datasets identified and collected by the ISAF IKM teams would be moved to the AEP's staging storage (up to IS/MS) and interim procedures for accessing the datasets would be put in place. The datasets would not be in the target format nor properly catalogued for archiving yet.

6.3.2 Stage 2

Stage 2 begins with the IC first stage authorization and finishes with the JFCBS Archiving solution reaching the IOC milestone and includes the following work packages.

6.3.2.1 WP4 – Provide ISAF Archive Solution (INV, PSC)

The work package provides the equipment and services required to establish the technical solution for the ISAF Archive to host the ISAF digital operational records which has been repatriated to Europe, namely:

a) NCI Agency to produce the IFB for the ISAF Archiving solution, run competition, have evaluation done and request 2nd stage authorization,
b) Procure the target storage for the ISAF Archive (150TB NAS),
c) Procure the archiving solution to build the ISAF Archive,
d) Implementation services (design, installation, configuration, COTS training).

6.3.2.2 WP5 – Reaching the Initial Operation Capability of the ISAF Archive (IES)

The work package is to configure and establish the ISAF Archive on the NS AIS Domain to equip JFCBS with the capability to carry out the organize phase:

a) Configure the NS environment to be able to host temporarily the FASes referenced in Annex A,
b) Transfer data from AEP to the target ISAF Archive staging storage,
c) Make the target ISAF Archive staging storage available to the JFCBS Archivist,
d) Return the ISAF IKM staging storage used for the bulk data move.

6.3.2.3 Stage 2 end-state

At the end of stage 2 all the datasets from the AEP's staging storage would be transferred to the newly created ISAF Archive staging storage (up to NS) and interim procedures for accessing the datasets would be updated. The datasets would not be in the target format nor properly catalogued for archiving yet.

6.3.3 Stage 3

Stage 3 begins with the JFCBS Archiving solution reaching the IOC milestone and achieving the FOC of the solution and includes the following work packages.

6.3.3.1 WP6 – Reaching the Final Operation Capability of the ISAF Archive and early support (IES)

The work package is to equip JFCBS Archivists with the procedures to carry out the organize phase, namely:

a) Develop technical procedures for data conversion,
b) Develop and document the records preservation workflows,
c) Provide early technical support for the ISAF Archive technical solution,
d) Train the JFCBS staff in using the ISAF Archive technical solution.

6.3.3.2 Stage 3 end-state

At the end of stage 3 the JFCBS Archivists would start a planned review of the datasets containing the ISAF digital operational records at the ISAF Archive staging storage (up to NS) and put the information of permanent value into the ISAF Archive. The target procedures for accessing the datasets would be developed, tested and put in place.

6.3.4 Stage 4

The stage 4 begins with the JFCBS Archiving solution achieving the FOC runs for 12 months.

6.3.4.1 WP7 – Support to the ISAF Operational Records organizing phase for the ISAF Archive (INV, IES, PSC)

The work package is to ensure operational support to the ISAF Archive in the organize phase:

a) Consultancy from FAS SMEs for analysis of FAS data schema, development of interface definition to the NATO Structured Data archive profile and transformation of records for ingest into the ISAF Archive,
b) Technical support to make the semi-active ready for operational records extraction on-demand,
c) Vendor technical support for the JFCBC Archive technical solution.

6.3.4.2 Stage 4 end-state

At the end of stage 4 the JFCBS Archivist are progressing with the review of the datasets containing the ISAF digital operational records at the ISAF Archive staging storage (up to NS) and putting the information of permanent value into the ISAF Archive. At this point the transition to O&M arrangement would take place.

7 Life Cycle Management

7.1 Concept of Support

7.1.1 The NCI Agency acts as the Implementation Authority (IA) as well as the Service Provisioning Authority (SPA) and is responsible for design and implementation, provisioning and support of the product baseline (PBL) related to the service of providing a solution for an archive for semi-active ISAF records (hereinafter referred to also as the “Service”).

7.1.2 Equipment and services will be handed over at FOC (see section Schedule) to NCI Agency SPA representatives at the local sites for operations and maintenance, under the direction of the NCI Agency SPA.

7.1.3 Each NCI Agency - CIS Support Units (sectors Brunnsum, Mons, Brussels and Kabul) will be responsible for the maintenance of the equipment placed at locations under their control following FOC. The Contractor(s) will be responsible for the maintenance of the equipment to be provided prior to FOC.

7.1.4 The NCI Agency Service Lines (CES, NSII, CSSL, SM&C) shall provide 2nd and 3rd level of support, to the CSUs, directly either through the Operation Center (NNCC and NDC). The Contractor shall be responsible for the 4th Level of support.

7.1.5 The crypto equipment and the associated keying material (keymat) shall be entered into the NATO Cryptographic Accounting System for cryptographic management and accounting and it shall be handled according to the instructions for the control and safeguarding of NATO Crypto Material (SDIP 293).

7.1.6. Below is provided the concept of support in terms of the levels of support, where it to be conducted (local or remote), and who will be responsible (NCI Agency / Contractor).

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No	Support Level and Definition (applicable to HW & SW)	Concept Post FOC for NATO Owned and , NATO Operated model		
		Local	Remote	Responsibility (NCI Agency/ Contractor)
1	**First Level Support.**			
1.1	This covers the Day-to-day housekeeping tasks: • Visual inspections, • Verification of function and performance, • Implementation of simple changes to the baseline configuration. • Raising trouble tickets, requests for service	X		On-site NCI Agency CIS SU
1.2	• Management of service requests and incidents at service desk level, in accordance with site processes ITILv3 framework or equivalent.		X	NCI Agency team OPS CTR
2	**Second Level Support**			
2.1	This covers: • Detailed baseline inspections and checkouts, • Limited calibrations, • Replacement of non-critical Line Replaceable Units (LRU)‘s, • Minor equipment repairs and modifications	X		On-site NCI Agency team (CIS Support Unit)
2.2	• Update of trouble tickets and request fulfilments o Re-evaluation of incident category, o Criticality and priority; • Identification of the root cause of the issue (e.g. by issue replication testing)		X	Central NCI Agency team (OPS CTR -SL)

No	Support Level and Definition (applicable to HW & SW)	Concept Post FOC for NATO Owned and , NATO Operated model		
		Local	Remote	Responsibility (NCI Agency/ Contractor)
	• Identification of workarounds • Identification and initial planning of possible short, medium and long-term solutions (e.g. workarounds, patches, or new releases); create change requests incl. • Schedule of implementation and synchronisation with the maintenance process; monitor and control the approved change request during implementation.			
3	**Third Level Support**			
	This covers: • Problem and modification analysis, • Complex Product BaseLine (PBL) repairs or replacements, • Detailed calibrations, • Supply support, • Overhaul and rebuild, • Implementation of major and/or critical changes to the PBL, • PBL restoration, • Post-maintenance review, • Monitoring and coordination of transportation. • Implementation of the deployment and release management in accordance with the ISO/IEC 20000 and ITILv3 framework or equivalent, including solutions to failures are developed, tested and		X	NCI Agency (OPS Centre– SL)

No	Support Level and Definition (applicable to HW & SW)	Concept Post FOC for NATO Owned and , NATO Operated model		
		Local	Remote	Responsibility (NCI Agency/ Contractor)
	deployed			
4	**Fourth Level Support**			
	• Repair or replacement of faulty baseline items, beyond the capability of third level support, usually by the original equipment manufacturer or (intermediate) item vendors.		X	Contractor

7.2 Required Support Functions.

7.2.1 Service Management and Control.

7.2.1.1 The Service Management and Control (SMC) will be to the Service Operation Centre, which will carry out the key central functions including:

- Service Desk
- Technical Management
- IT Operations Management
- Application Management.

7.2.2.2 The identification, collection, and transfer of data service shall be provided and centrally-managed through the Service Operations Centre to exercise control of all configuration, operational and troubleshooting activities as required to ensure the required service availability.

7.2.2.3 The NCI Agency shall be responsible for SM&C levels 1, 2 and 3 from the FOC to the end-of-life in accordance with the ISO/IEC 20000 and ITIL v2011 framework, or equivalent.

7.2.2.4 The existing SM&C tools shall be used where possible and be amended with appropriate purchased tools, if necessary.

7.2.2 Configuration Management

7.2.2.1 The Project Manager with the Integrated Project Management Team (IPMT) will be responsible for the configuration management of the project deliverables up to FOC.

7.2.2.5 Upon acceptance, NCI Agency Service Operation and CIS Support Units will assume responsibility for the new capability configuration management. This will be coordinated and maintained with the support of the NCI Agency Service Lines.

7.2.3 Quality Assurance

7.2.3.1 For the Work Packages (WPs) implemented by Contractor, he shall use the internal QA process during the implementation of this project.

7.2.3.2 The Contractor will be required to have an ISO 9001:2008 certificate, or an equivalent.

7.2.3.3 The Contractor will be required to operate in accordance with AQAP 160, 2070, 2110, 2210, 2130 and 2131, where deemed appropriate.

7.2.4 Logistic Support

7.2.4.1 All COTS equipment delivered as a part of this project will be provided with standard warranty of one years. All COTS software will be provided with one year warranty which will include software updates and maintenance.

7.2.4.2 NCI Agency Service Operation will be responsible for the maintenance of the equipment procured, for their specific site, under this TBCE following FOC. The Contractor will be responsible for the maintenance of the equipment to be provided prior to FOC

7.2.4.3 A set of spares will be provisioned by the Contractor. The value of this set is estimated approximately 10% of the item/equipment/hardware procurement value.

7.2.5 Training

7.2.5.1 The BI-SC Training Directive No. 75 shall be applied to cover the Service with professional user and administrator training

7.2.5.2 The Contractor will be required to provide training on the new equipment. This will be provided for the sites which will receive the equipment. The training must provide sufficient knowledge to allow the NCI Agency personnel to operate and maintain the systems on the 1st and 2nd support levels.

7.2.5.3 The training will be COTS based and on-the-job, and it will take place on site for an audience which will be up to approximately 5 people for each site.

7.3 Support Stages

7.3.1 Preparation

7.3.1.1 During the Preparation Stage, the NCI Agency is expected to participate in technical reviews, quality audits and Factory Acceptance Tests (FAT). The NCI Agency performs Configuration Management and controls the current Operational Baseline. The NCI Agency will provide guidelines to the Implementation Contractor for the development and maintenance of training material.

7.3.1.2 The WPs Contractor shall provide up-to-date COTS documentation, operation manuals and maintenance manuals in support of the O&M of the system installed. and all the training.

7.3.2 Implementation

7.3.2.1 The Service will be implemented by the Contractor. The NCI Agency will provide support during the implementation, as well as test and acceptance.

7.3.3 Transition

7.3.3.1 During the period between delivery and FOC, the proposed system will be maintained by the Contractor under NCI Agency supervision.

7.3.3.2 The Contractor will propose a Transition Plan, which will be subject to approval by the SPA. The Transition Plan will focus on allowing the SPA to familiarize itself with the Service and determine the SPA's readiness to accept the system, and ensuring the SPA has the required tools and knowledge to conduct the support role.

7.3.3.3 NCI Agency will provide planning and technical support to the transition period. The NCI Agency takes the responsibility for the foreseen level of support for the new capability from FOC onwards.

7.3.3.4 Following the FOC the 3rd Level Support responsibility for the new capability will rest with the Implementation Contractor during the warranty period. This support may also be contracted to vendors at the end of the warranty period

7.3.4 Acceptance

7.3.4.1 The operational acceptance of the Service will be considered complete when Final Operational Capability (FOC) is achieved. FOC achievement will require:

- Each site to have achieved Initial Operational Capability (IOC): the Service is established and in operational use by the entity in the scope, and all the users already having the connectivity
- Cross-site capability will be achieved. (E.g. cross site replication, services functioning across sites).
- Full System Acceptance will be achieved, when all contract deliverables have been achieved.

7.3.5 After acceptance

7.3.5.1 Operation and Maintenance of all assets shall become the responsibility of NCI Agency, in accordance with the agreed levels of support

8 Interdependencies

Interdependencies with other projects where scope and implementation should be coordinated are briefly identified below.

8.1 Related Projects

8.1.1.1 ISAF CUR 1721 - CIS Service Optimisation, the projects for this CUR are required to provide;

a) A Single Enterprise Network (SEN) - consolidating the IOC and CISAF networks into a single enterprise network for each mission security domain (NU, NS, MS)

b) HQ ISAF Tech Refresh – refreshing and re-architecting the HQ ISAF CIS for each mission security domain
c) Establish European NOC – establishing a European Network Operations Centre (NOC) at SHAPE campus
d) Increasing network capacity and resilience of the terrestrial reach back link to Mons.

8.1.1.2 ISAF CUR 1771 - Relocate Theatre CIS Hub from KAF

a) Establishing a new CISAF CIS TAAC node at KAF
b) Migrating all ISAF operational data from the KAF IOC networks to the TAAC CIS infrastructure.
c) Facilitate the archiving of IOC data at KAF to the staging repository for repatriation.
d) Decommissioning and disposition of redundant IOC CIS at KAF

8.1.1.3 CP 9C0107 - Functional Services for Command and Control of Operations;

a) Potential future development of FAS systems to be able to export records into a standard format for archiving and long-term preservation.

8.1.1.4 NATO HQ EM-AIS Project on Long term preservation of NATO's digital archives, also known as the NATO HQ e-repository Project.

e) The e-repository project will provide the technical solution to receive the ISAF Operational Records identified as being of permanent value at EOM + 5 Years. The chosen technical solution with define the interface specification which the ISAF Archive solution provided under this CUR will need to comply.

8.1.1.5 JFCBS have stated the intent to raise a separate CUR for the manpower for the Organise and Dispose Phases, in response to the original SHAPE Tasker on ISAF Operational Records (Ref. 1.3.1)

a) The Manpower CUR will define and provide the team to conduct the Organise and Dispose phases. This team will require user access to the ISAF Archive solution, as well as training and system support.

9 Implementation Assumptions & Constraints

9.1 Operational Assumptions

9.1.1 The definition of what constitutes the Operational Record and data of value will be determined by HQ ISAF based on NATO Policy, Direction and Guidance to limit a potential catch-all approach to data collection, transfer and storage.

9.1.2 HQ ISAF will direct those system owners/maintainers responsible for FAS and ISAF Applications containing the operational records of permanent value to identify,filter and reduce the amount of data as part of the collection phase.

9.1.3 A log of all Operational Record data already collected and copied to assured storage or transferred is maintained by HQ ISAF.

9.1.4 The HQ ISAF is responsible for validating the completeness of the operational records to be transferred to the repository located at the AEP.

9.1.5 Whilst all ISAF Records will be repatriated, all ISAF Records that are less than two (2) years old will be retained in-theatre as managed copies on assured storage to support the RS mission. The supporting technical systems (services) will also be maintained in-theatre to support immediate access. The RS Mission will be responsible to provide for the services to host and manage ISAF Records that are retained in Theatre after 31 Dec 2014.

9.1.6 HQ JFCBS will drive the development of the necessary CONOPS with the assistance of NCI Agency to ensure the capability can be effectively operated and supported.

9.1.7 Physical records are not in the scope of this TBCE.

9.1.8 The System Managers of the Functional Services subject to the project (listed in Annex B – Systems that contain ISAF Operational Records) are already funded (at least till the planned project FOC) and will support the project implementation through:

9.1.8.1 Providing ISAF IKM with access to the source systems, local data transfer and advising on the best way to secure the system for transfer (estimated at 2 man-days per system),

9.1.8.2 Providing NCI Agency personnel with guidance on standing-up instances of the system in Europe for the purpose of the semi-active access to the operational records (estimated at ~7 man-days per simple system and 12 man-days per complex one),

9.1.8.3 Providing project Contractor and NCI Agency personnel with guidance on extracting operational data from the system, data conversion, tagging and

handling for the purpose of organizing and storing in the ISAF Archive (estimated at ~5 man-days per simple system and 15 man-days per complex one).

9.1.9 Both the AEP / Euro-POP personnel and infrastructure (hosting, backup, replication, WAN links) will remain funded and kept operational out of separate arrangements at least up until project FOC.

9.2 Technical Assumptions.

9.2.1 There is adequate capacity (space, power, cooling) in the technical facilities in theatre in the Kabul cluster Datacentre(s) and in Mons at the European-PoP and SHAPE Datacentre to uplift existing storage capacity to meet the needs of the project.

9.2.2 The RS mission will take over ISAF CIS assets, systems and data and will continue for at least 2 years, applying the same archiving processes for ISAF data to RS mission data until EOM (End of Mission).

9.2.3 That for some FAS (Functional Area Systems) both the data and an image of the system configuration and associated application software will need to be collected and stored to ensure access to the operational record.

9.2.4 That that the total volume of data operational records and supporting system images to be repatriated to the AEP and SHAPE Datacentre (some is already replicated) will not exceed 150TB and that than 50TB available working space is sufficient to support the access and validation of the records.

9.2.5 SAN storage arrays (disk shelves) in theatre and in Europe are interoperable to allow the bulk transportation of data and “seeding” of the Euro-PoP storage so that incremental (delta) replication of data across the network is possible.

9.3 Constraints

9.3.1 The existing ISAF Operational Archivist will leave the Mission sometime before EOM potentially without replacement. The RS Mission may not have an Operational Archivist in post, based at HQ RS, as of 1 Jan 2015.

9.3.2 Most core services and functional area systems (FAS) do not have readily available interfaces, tools or processes in place to enable the filtered off-loading of content or records into an archivable format for long term retention.

9.3.3 The physical/manual transportation of data is limited to the approved hardware encrypted portable hard drives (maximum storage capacity up to 1TB) each requires three available USB ports thereby constraining data collection times and transportation volumes to the AEP.

9.3.4 The replication of data from theatre (Kabul cluster) to the AEP is currently restricted to 6Mbps guaranteed bandwidth, limiting transfer to about 20GB per day and would need to be increased 10 fold to support the capability going forward. The assumption is that projects from CUR 1721 will provide the increased network capacity and resilience of the terrestrial reach back link to Mons.

9.3.5 There is limited capacity to perform data validation processes at the AEP to confirm the data is accessible (not corrupt) and complete which have to be carried out before the source data in theatre can be disposed of.

Annex A to
Enclosure 2 to
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10 Risk Management

10.1 Approach

10.1.1 Risks encountered in the project will be addressed using the principles of Agency's Risk Management methodology. The PM is responsible for establishing and maintaining the Risk Register and collecting new risks. The Integrated Project Management Team reviews new risks and agrees to their impact, probability, and mitigation measures. Significant new or changed risks will be elevated to the appropriate cross-stakeholder management group for assignment or direction.

10.2 Risk Register

The table below lists top 5 risk-threats to the offered implementation plan.

No	Description	Prob	Imp	Mitigation measures	Risk Owner
1	There may be not enough time left upon 1st stage authorization to perform the data repatriation.	H	H	In parallel with the TBCE submission the ACO should seek military funding for the execution of the WP1 scope.	ACO J6
2	The target NATO Archive Long Term Preservation solution may put new unexpected requirements on the disposition phase of the activity.	L	H	NCI A should defer the disposition phase part of the scope until the The target NATO Archive Long Term Preservation solution is known.	NCI A
3	Security constraints may not allow for bulk data transfer out of theatre requiring multiple transport iterations.	M	M	ACO should seek a waiver for the data repatriation transport to allow bulk data transfer out of the theatre.	ACO J6
4	The repatriated data may not be sufficiently categorized nor labelled to allow the Archivists to achieve expected performance in forming SIPs.	H	M	ISAF IKM should employ quality control to ensure sufficient categorization and labelling of the source data to be repatriated.	ISAF IKM
5	The NATO procurement procedures may require more time to source COTS and services than anticipated due to disputes, miscommunication or insufficient execution potential.	M	M	NCI Agency should gather early feedback from bidders as soon as possible and adjust requirements & constraints (with ACO J6 consent) to ensure meeting the deadlines.	NCI A

Table 8-1: Project Risk Register

11 Procurement Strategy

Given the urgency and the priority assigned to this investment we propose to re-use the currently active contracts for priority procurements (stage 1) and apply the AOM ICB procedures to select the providers of the archiving capability (stages 2-4).
We specifically recommend to:

a) leverage the current CISAF contract (CO-13125-OPL) with Thales France for providing additional storage capacity in Kabul and provide on-site engineering support to the data transfer (outsourced arrangement). ISAF operational records repatriation needs to take place before the end of mission. Thales currently provides the majority of CIS services under the CISAF contract, and due to above time constraint and the urgent need for the additional storage capacity and engineering services to stage the ISAF datasets, Thales assistance is indispensable.
b) leverage the on-going contract with Telindus NV to extend the storage capacity of the AEP infrastructure at SHAPE campus and provide on-site engineering support to the data transfer. The ISAF datasets need to be received into the AEP / Euro-POP at SHAPE CIS infrastructure and it is proposed to utilize the current contractor supporting the Afghan Mission Network (AMN), which was competed as AOM ICB and awarded to Telindus N.V. Telindus N.V. is about to deliver expansion of the NetApp NAS storage to the AEP / Euro-POP at SHAPE of CIS services which would be used to accommodate the datasets coming from ISAF until the target JFCBS Digital Archive is established, and therefore Telindus is deemed best positioned to provide the needed equipment and services at very short notice.
c) leverage the established contract with VIASAT to source the mobile encrypted drives for hand-carrying data transfer. ISAF operational records repatriation needs to take place before the end of mission. Due to bandwidth limitations we need hand-carry data and the only mobile storage solution certified to carry up to NS/MS/IS data comes in the form of VIASAT Eclypt Freedom 600 mobile HDDs. We assume 3 trips to execute 100 transports of datasets which translates to at least 35 HDDs to be procured.
d) Sole source to the VMWare Enterprise Agreement for the virtualization software. The JFCBS semi-active digital archive will have to host snapshots of the systems holding ISAF operational records. We plan to transport the images of the virtual machines of the systems listed in annex B of the CUR-1722-2014 TBCE. To host the virtual machines first at AEP / Euro-POP, next at the JFCBS Digital Archive we need to extend the VMware vSphere environment with additional licenses. We propose to use the NATO Enterprise Agreement with VMware.

The table presented below lays out the procurement plans across the identified work packages with the granularity to the group of products or services to be acquired.

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Work package	Item	Type	Procurement strategy
WP1 – Priority Procurements	Provision of additiona storage at in Kabul	INV	Sole source to THALES (CISAF)
	AEP storage uplift	INV	Sole source to Telindus NV
	Mobile encrypted drives	INV	Sole source to VIASAT
	Bulk encryption solution for physical transfer from ISAF	INV	Sole source to THALES (CISAF)
	VMware licenses	INV	Sole source to VMware EA
WP2 – Support Data Transfer and Validation	NCI A CES AEP engineering	IES	Sole source to NCI Agency
	CISAF engineering	INV	Sole source to THALES (CISAF)
	NCI A SL CES, Ops Analysis engineering	IES	Sole source to NCI Agency
	Bulk data storage packaging by NCI A CSU ISAF	IES	Sole source to NCI Agency
WP3 – Physical Bulk Data Transfer	Bulk data storage transport from Kabul to SHAPE Campus	INV	NATO Courier + commercial transport services
	Procurement of the technical solution for the ISAF Archive with implementation services	INV	AOM ICB accelerated procedure
	Bulk data receival and testing by NCI A CES SL	IES	Sole source to NCI Agency
WP4 – Provide ISAF Archive Solution	Procurement of the target staging storage for the ISAF Archive	INV	AOM ICB accelerated procedure
	NCI A CES AEP engineering	IES	Sole source to NCI Agency
WP5 – Reaching the Initial Operation Capability of the ISAF Archive	NCI A SL CES, Ops Analysis engineering	IES	Sole source to NCI Agency
	Early technical support services for the ISAF Archive	INV	AOM ICB accelerated procedure
WP6 – Reaching the Final Operation	NCI A SL CES, Ops Analysis engineering	IES	Sole source to NCI Agency

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Work package	Item	Type	Procurement strategy
Capability of the ISAF Archive and early support	Early technical support services for the ISAF Archive until FOC	INV	AOM ICB accelerated procedure
WP7 – Support to the ISAF Operational Records organizing phase for the ISAF Archive	NCI A SL CES, Ops Analysis engineering	IES	Sole source to NCI Agency
	Early technical support 1y	INV	AOM ICB accelerated procedure

12 Schedule

The detail execution schedule will be developed at the initiation phase of the project. The section below lists the key milestones, their sequencing and the expected time of completion.

12.1 Major Milestones

Milestone	Milestone Description	Milestone Duration	Milestone Date
T1	Authorization	-	Nov 2014
T2	WP1 Contracts award	-	Dec 2014
T3	Data repatriated	-	Dec 2014*
T4	RFQ Release	T1 + 2 months	Jan 2015
T5	Contract Award	T4 + 6 months	Aug 2015
T6	Initial Operational Capability	T5 + 4 months	Dec 2015
T7	Full Operational Acceptance	T6 + 2 months	Jan 2016
T8	Submit partial JFAI Request	T7 + 3 months	May 2016
T9	Early support delivered (Physical Scope Completion)	T7 + 12 months	Jan 2017
T10	Submit JFAI Request	T9 + 3.5 months	May 2017

* - T3 milestone refers only to securing the datasets collected by ISAF IKM team for transfer, depending on the date of the TBCE authorization some WP1 activities may be executed in 2015.

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13 Required Resources

13.1 Investment Costs

The total estimated investment cost break down is listed in the table below:

Work package	Investment cost
WP1 – Priority Procurements	936,705
WP2 - Support Data Transfer and Validation	107,310
WP3 – Physical Bulk Data Transfer	18,375
WP4 – Provide ISAF Archive Solution	660,744
WP5 – Provision of ISAF Archive (IOC)	10,500
WP6 – Reaching the Final Operation Capability of the ISAF Archive and early support	361,095
WP7 –Support to the ISAF Operational Records organizing phase for the ISAF Archive	100,800
	2,195,529

The sub-sections below present further breakdown of the investment costs.
Note that some workpackages carry mainly IES and PSC costs.

13.1.1 Stage 1, WP1 – Priority Procurements

WP1 – Priority Procurements to Enable Data Repatriation		
WBS #	**WBS Description**	**Total Price Euro (€)**
1	Project Management	€ 24,000
2	Engineering	€ 12,000
3	Implementation	€ 24,000
4	Service Costs (Recurring)	€ 30,000
5	Equipment	€ 802,100
Subtotal		€ 892,100
Contingency		€ 44,605
Total - Work Package 1		€ 936,705

13.1.2 Stage 1, WP2 – Support Data Transfer and Validation

WP2 - Support Data Transfer and Validation		
WBS #	**WBS Description**	**Total Price Euro (€)**
1	Project Management	-
2	Engineering	€ 102,200
Subtotal		€ 102,200
Contingency		€ 5,110
Total - Work Package 2		€ 107,310

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13.1.3 Stage 1, WP3 – Physical Bulk Data Transfer

WP3 – Physical Bulk Data Transfer		
WBS #	**WBS Description**	**Total Price Euro (€)**
1	Project Management	-
2	Engineering	-
3	Implementation	€ 7,500
4	Services	€ 10,000
Subtotal		€ 17,500
Contingency		€ 875
Total - Work Package 3		€ 18,375

13.1.4 Stage 2, WP4 – Provide ISAF Archive Solution

WP4 – Provide JFCBS Archive Solution		
WBS #	**WBS Description**	**Total Price Euro (€)**
1	Project Management	€ 55,000
2	Engineering	€ 88,900
3	Implementation	€ 201,400
4	Service Costs (Recurring)	€ 68,580
5	Equipment	€ 215,400
Subtotal		€ 629,280
Contingency		€ 31,464
Total - Work Package 4		€ 660,744

13.1.5 Stage 2, WP5 – Reaching the Initial Operation Capability of the ISAF Archive

WP5 – Provision of JFCBS Archive (IOC)		
WBS #	**WBS Description**	**Total Price Euro (€)**
1	Project Management	-
2	Engineering	-
3	Equipment	€ 10,000
Subtotal		€ 10,000
Contingency		€ 500
Total - Work Package 5		€ 10,500

13.1.6 Stage 3, WP6 – Reaching the Final Operation Capability of the ISAF Archive and early support

WP6 – Reaching the Final Operation Capability of the JFCBS Archive and early support		
WBS #	**WBS Description**	**Total Price Euro (€)**
1	**Project Management**	**-**
2	**Engineering**	**€ 343,900**
Subtotal		**€ 343,900**
Contingency		**€ 17,195**
Total - Work Package 6		**€ 361,095**

13.1.7 Stage 4, WP7 – Support to the ISAF Operational Records organizing phase for the ISAF Archive

WP7 –Support to the ISAF Operational Records organizing phase for the JFCBS Archive		
WBS #	**WBS Description**	**Total Price Euro (€)**
1	**Project Management**	**-**
2	**Engineering**	**€ 96,000**
Subtotal		**€ 96,000**
Contingency		**€ 4,800**
Total - Work Package 7		**€ 100,800**

13.2 Internal Engineering Services

The total estimated IES labour break down is listed in the table below:

Work package	IES [man-day]
WP2 – Support Data Transfer and Validation	80.7
WP3 – Physical Bulk Data Transfer	12.1
WP4 – Provide ISAF Archive Solution	16.3
WP5 – Provision of ISAF Archive (IOC)	87.0
WP6 – Reaching the Final Operation Capability of the ISAF Archive and early support	74.7
WP7 –Support to the ISAF Operational Records organizing phase for the ISAF Archive	106.0
Monitor, control & report	33.2
Portfolio Management	3.3
Contingencies	**16.5**
TOTAL	**429.8**

The activities planned as IES required in-depth knowledge of the CIS infrastructure and environment to transfer the digital operational records and keep them available until the target archive it available.
The sub-sections below present further breakdown of the IES labour.

13.2.1 Stage 1, WP2 – Support Data Transfer and Validation

The Engineering services planned under this work package aim at:

- Providing technical support to the ISAF IKM community in putting all collected datasets on the ISAF staging storage in the right format and labelling,
- Collaborating with Contractor in expanding the capacity of the ISAF staging storage,
- Performing and additional data copy and backup on tapes,
- Seting the network data replication up for archiving,
- Data transmission testing,
- Supervising the bulk data replication,
- Performing 3 data hand-carrying trips to the theatre to transfer remaining portions of data using mobile hard drives,

This work package carries 76,230 EUR of planned travel costs to Kabul.

The table below lists the estimated effort on per task group basis:

Task Name	NCI Agency role rate level F1	F2	F3	F4	F5	Total (man-days)
Stage 1 - Data Repartiation						
WP#2						
WP#2.1 - ISAF Archive Storage Loading						
ISAF IKM populates the storage	9.5					9.5
WP#2.2 - Network Data Transmission						
Setup of the replication for archiving		3.0				3.0
Data transmission test		2.0				2.0
Bulk replication		2.0		5.1	9.5	16.5
WP#2.3 - Manual Transport						
Manual collection #1		5.0				5.0
Manual collection #2		6.6		10.5	5.3	22.4
Manual collection #3		6.6		10.5	5.3	22.4
TOTAL	**9.5**	**25.1**		**26.1**	**20.0**	**80.7**

Note that overheads and contingencies are not included.

13.2.2 Stage 1, WP3 – Physical Bulk Data Transfer

The Engineering services planned under this work package aim at:

- Receival at SHAPE, reconnecting at AEP,
- Testing the integrity of datasets.

The table below lists the estimated effort on per task group basis:

Task Name	NCI Agency role rate level F1	F2	F3	F4	F5	Total (man-days)
Stage 1 - Data Repartiation						
WP#3						
Receival at SHAPE, reconnecting at AEP				2.1		2.1
Testing		5.0		5.0		10.0
TOTAL	**0.0**	**5.0**	**0.0**	**7.1**	**0.0**	**12.1**

Note that overheads and contingencies are not included.

13.2.3 Stage 2, WP4 – Provide ISAF Archive Solution

The Engineering services planned under this work package aim at providing security accreditation documentation and testing required to setup the ISAF Archive.

The table below lists the estimated effort on per task group basis:

Task Name	NCI Agency role rate level F1	F2	F3	F4	F5	Total (man-days)
Stage 2 - Provision of the JFCBS Archive (IOC)						
WP#4						
Security accreditation activities		16.3				16.3
TOTAL	**0.0**	**16.3**	**0.0**	**0.0**	**0.0**	**16.3**

Note that overheads and contingencies are not included.

13.2.4 Stage 2, WP5 – Reaching the Initial Operation Capability of the ISAF Archive

The Engineering services planned under this work package aim at:

- Setup of the semi-active FASes (coordination with the Contractor consultants and the FAS System Managers)
- Data transfer (facilitate the bulk replication from IS to NS)
- Return of the ISAF Archive storage (coordination of logistics)

The table below lists the estimated effort on per task group basis:

Task Name	NCI Agency role rate level F1	F2	F3	F4	F5	Total (man-days)
Stage 2 - Provision of the JFCBS Archive (IOC)						
WP#5						
Setup of the semi-active FASes		44.3		18.9		63.3
Data transfer		10.0		10.5		20.5
Return of the ISAF Archive storage				3.2		3.2
TOTAL	**0.0**	**54.3**	**0.0**	**32.6**	**0.0**	**87.0**

Note that overheads and contingencies are not included.

13.2.5 Stage 3, WP6 – Reaching the Final Operation Capability of the ISAF Archive and early support

The Engineering services planned under this work package aim at:

- Developing technical procedures for data conversion,
- Support the development organizational procedures for ISAF OR organizing phase,
- Provide early support in using the JFCBS Archive,
- Train the JFCBS staff.

The table below lists the estimated effort on per task group basis:

Task Name	NCI Agency role rate level F1	F2	F3	F4	F5	Total (man-days)
Stage 3 - Reaching FOC						
WP#6						
Develop technical procedures for data conversion		14.5				14.5
Develop organizational procedures for ISAF OR organizing phase	9.5	14.5				23.9
Provide early support in using the JFCBS Archive				10.5		10.5
Train the JFCBS staff	5.0	5.0		15.8		25.8
TOTAL	**5.0**	**5.0**	**0.0**	**26.3**	**0.0**	**74.7**

Note that overheads and contingencies are not included.

13.2.6 Stage 4, WP7 – Support to the ISAF Operational Records organizing phase for the ISAF Archive

The Engineering services planned under this work package aim at providing long-term support in using the JFCBS Archive during 1 year period from the FOC.

The table below lists the estimated effort on per task group basis:

Task Name	NCI Agency role rate level F1	F2	F3	F4	F5	Total (man-days)
Stage 4 - Support to OR Organizing						
WP#7						
Provide long-term support in using the JFCBS Archive		53.0		53.0		106.0
TOTAL	**0.0**	**53.0**	**0.0**	**53.0**	**0.0**	**106.0**

Note that overheads and contingencies are not included.

13.3 O&M Costs

The table below lists the estimated operation and maintenance cost for the capability to be delivered under the project:

Cost item	Y2016	Y2017	Y2018	Y2019	TOTAL
Software	17,145 €	68,580 €	68,580 €	68,580 €	**222,885 €**
Hardware	52,205 €	208,820 €	208,820 €	208,820 €	**678,665 €**
Manpower	22,720 €	90,880 €	90,880 €	90,880 €	**295,360 €**
Total costs	**92,070 €**	**368,280 €**	**368,280 €**	**368,280 €**	**1,196,910 €**

O&M Notes

a) For 2016 only last quarter is account ed to be funded from O&M, since the first year of support is covered under stage 4, WP7,
b) The services for Hardware provisioning is estimated at 20% initial cost value for annual cost,
c) COTS Software maintenance is estimated at 68,580 EUR/year,
d) Software maintenance is split between NCI Agency 2nd level of support and Contractor (the archiving solution provider) for 3rd level of support,
e) Manpower is related to the previous successful Bi-SC AIS experience that is costed as NCI Agency's 53 days B4 level (technical support) and 53 days A3 level (procedural support) a year with 2,500€ earmarked for travel.

14 Project Management

14.1 Project Stakeholders

At the time of the document preparation the following stakeholders have been identified:

a) ACO as the Operational Authority (OA), represented by ACO J6.
b) ACO IKM as the SHAPE Tasker POC.
c) ACO J6 as the ACO Requirements Holder.
d) ACT as the Transformation Authority (TA), represented by ACT R&M.
e) The NATO Office of Resources (NOR) as Financial Authority.
f) NATO Security Accreditation Board (NSAB) as the Security Accreditation Authority (SAA).
g) ISAF Security Accreditation Board (ISAB) as the ISAF Security Accreditation Authority (SAA).
h) HQ JFC Brunssum as the CUR Action Office, Functional Authority, lead User representative and ISAF Record Custodian, represented by JFC Brunssum BIM.
i) HQ ISAF as the incumbent ISAF Record Custodian, represented by ISAF HQ OP ARCHIVIST.
j) NATO Archivist as the concluding ISAF Record Custodian, represented by NATO HQ ICTM-AIM.

k) NCI Agency as the Service Provisioning Authority and Implementation Authority (Host Nation).

14.2 Integrated Project Management Team (IPMT)

The IPMT, chaired by the NCI Agency, will coordinate implementation activities. The IPMT will be the body responsible for managing the project through the implementation stages, including:

a) Project authorisation
b) Initial Mitigation (Stage 1)
c) IFB production, Bid evaluation, Contract Execution (Stage 2; design, testing, implementation, etc.)
d) Organizing phase preparation (Stage 3)
e) Organizing phase execution (Stage 4)

The IPMT will serve as project Configuration Control Board (CCB) responsible for documenting and maintaining baselines and control.

14.3 Project Governance

The NCI Agency Project Board will enforce standing NCI Agency project control practices and monitor project management activities in accordance with the Agency's project management methodology.
A Project Board (PB) has been formed at Project Start Up. The Project Manager will report and declare exceptions to the PB acting as the first escalation body.
Communication and Control
Issue and Risk management and reporting will be in accordance with the NCI Agency guidelines for project governance.
Project Tolerances will be established by the PB for both time and cost and Highlight Reports will be provided to the PB on a regular basis.
Exception Reporting and Planning will be used to raise and address problems that break Project Tolerances.
A project workspace will be set up and updated regularly by the project team so that up to date and necessary documentation is available to everyone involved in the project.

15 Abbreviations

15.1 Only project specific abbreviations are defined in the following table

Abbreviation	Definition
Ai	inherent Availability
Ao	operational Availability
AP	Access Points
APF	Advanced Planning Funds
ANWI	Active NetWork Infrastructure
BC	Business Case
BICES	Battlefield Information Collection and Exploitation Systems
BOA	Basic Ordering Agreement
BWM	Bandwidth Management
CCB	Configuration Control Board
C3	Consultation Command and Control
CES	Core Enterprise Services
CIS	Communications Information Systems
COCO	Contractor Owned and Contractor Operated
CoI	Community of Interest
COTS	Commercial Of The Shelf
CMDB	Configuration Management Database
CP	Capability Package
CSC	Circuit Switched Component
DC	Data Centre
DCIS	Deployable CIS
FOC	Full Operational Capability
FS	Functional Service
FSA	Full System Acceptance
FTE	Full Time Equivalent
Gbps	Giga bits per second
GIS	Geographical Information System
GM	General Manager
HQ	Headquarters
HW	Hardware
IA	Information Assurance
IaaS	Infrastructure as a Service
IDP	Intrusion Detection Probe
IFB	Invitation For Bid
IOC	Interim Operational Capability
IP	Internet Protocol
IPMT	Integrated Project Management Team
ISO	International Standards Organisation
ITM	Information Technology Modernisation
JFAI	Joint Final Acceptance Inspection
LAN	Local Area Network
Mbps	Megabits per second
NAF	NATO Architecture Framework
NATO	North Atlantic Treaty Organisation
NCI	NATO Communications Infrastructure
NCI Agency	NATO Communications and Information Agency

Abbreviation	Definition
NCIRC FOC	NATO Computer Incident Response Capability – Full Operational Capability
NGCS	NATO General Communications System
NNEC	NATO Network-Enabled Capability
NONO	NATO Owned and NATO Operated
NR	NATO Restricted
NS	NATO Secret
NSAP	NATO Security Accreditation Board
NSIP	NATO Security Investment Programme
NU	NATO Unclassified
NR	NATO Restricted
OA	Operational Authority
O&M	Operations & Maintenance
ON	Operational Network
PB	Project Board
PBN	Protected Business Network
PM	Project Manager
PoCT	Proof of Concept Test
PSA	Provisional Site Acceptance
PSC	Project Service Cost
PTC	Packet Switched Component
QoS	Quality of Service
ROI	Return on Investment
ROM	Rough Order of Magnitude
SACEUR	Supreme Allied Commander EURope
SAA	Security Accreditation Authority
SAP	Security Accreditation Plan
SLA	Service Level Agreement
SMC	Service Management and Control
SOA	Service Oriented Architecture
SPA	Support Provision Authority
SPOF	Single Point Of Failure
TBCE	Type B Cost Estimate
TCE	Thales Crypto Equipment (Thales propriety term)
VoIP	Voice over Internet Protocol
WP	Work Package

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16 Annex A - Cost Estimate

16.1 WP1 – Priority Procurements

WP1 – Priority Procurements to Enable Data Repatriation			
WBS #	**WBS Description**	**Total Price Euro (€)**	**Procurement Strategy**
1	**Project Management**	**€ 24,000**	
1.1	Project Management (@ISAF)	€ 12,000	SS to Thales
1.2	Project Management (@AEP)	€ 12,000	SS to Telindus
2	**Engineering**	**€ 12,000**	
2.1	Design & Documentation (@ISAF)	€ 6,000	SS to Thales
2.2	Design & Documentation (@AEP)	€ 6,000	SS to Telindus
3	**Implementation**	**€ 24,000**	
3.1	Installation Engineering (@ISAF)	€ 12,000	SS to Thales
3.2	Installation Engineering (@AEP)	€ 12,000	SS to Telindus
4	**Service Costs (Recurring)**	**€ 30,000**	
4.1	Support + NRD option for DSK SHLF (12months) (@ISAF)	€ 15,000	SS to Thales
4.2	Support + NRD option for DSK SHLF (12months) (@AEP)	€ 15,000	SS to Telindus
5	**Equipment**	**€ 802,100**	
5.1	***ISAF - Kabul Cluster Storage Services (Staging Repository)***	***€ 240,000***	SS to Thales
5.1.2	IS Storage Capacity Uplift by 100TB (Online Storage)	€ 180,000	SS to Thales
5.1.3	IS Storage Capacity Uplift by 25TB (Nearline Backup Storage)	€ 30,000	SS to Thales
5.1.4	NS Storage Capacity Uplift by 25TB (Online Storage)	€ 30,000	SS to Thales
5.2	***Mons - AEP Storage Procurement (Intermediate Store)***	***€ 210,000***	SS to Telindus
5.2.1	IS Storage Capacity Uplift by 100TB (Online Storage)	€ 120,000	SS to Telindus
5.2.2	IS Storage Capacity Uplift by 25TB (Online Storage - Access & Verification)	€ 60,000	SS to Telindus
5.2.3	IS Storage Capacity Uplift by 25TB (Nearline Backup Storage)	€ 30,000	SS to Telindus
5.3	***Mons - (AIS) Storage Procurement (Semi-Active Archive)***	***€ 152,000***	SS to Telindus
5.3.1	IS Storage Capacity Uplift by 100TB (Online Storage)	€ 120,000	SS to Telindus
5.3.2	IS Storage Capacity Uplift by 25TB (Online Storage - Access & Verification)	€ 30,000	SS to Telindus
5.3.3	Sundry Installation Equipment & Consumables	€ 2,000	SS to Telindus
5.4	***IS AEP Repository Processing Services Uplift (Supporting Verification)***	**€ 48,000**	
5.4.1	Mons - AEP Server Hardware Uplift	€ 24,000	AOM BOA
5.4.2	Mons - AEP Server Software Uplift - VMWare Virtualization Licence	€ 24,000	VMWare Enterprise Agreer
5.5	Provision of a Bulk Data Encryption Solution	€ 95,000	SS to Thales
5.6	VIASAT Eclypt Freedom 600 1TB mobile hard drives	€ 37,100	SS to VIASAT
5.7	**Transport**	€ 20,000	Commercial courier
Subtotal		**€ 892,100**	
Contingency		**€ 44,605**	
Total - Work Package 1		**€ 936,705**	

16.2 WP2 – Support Data Transfer and Validation

WP2 - Support Data Transfer and Validation			
WBS #	**WBS Description**	**Total Price Euro (€)**	**Procurement Strategy**
1	**Project Management**	**-**	
1.1	Project Management	€ -	
2	**Engineering**	**€ 102,200**	
2.3	***Uplift or extend CISAF engineering team***	**-**	
2.3.1	1 x FTE (CES) 60 MD	€ 72,000	SS to THALES
2.4	***Provide support for data repatriation***		
2.4.1	Support to ISAF Archive storage loading	€ 16,000	SS to THALES
2.4.2	Support to network data transmission	€ 12,000	SS to THALES
2.4.3	Support to data hand-carrying transport	€ 2,200	SS to THALES
Subtotal		**€ 102,200**	
Contingency		**€ 5,110**	
Total - Work Package 2		**€ 107,310**	

16.3 WP3 – Physical Bulk Data Transfer

WP3 – Physical Bulk Data Transfer			
WBS #	**WBS Description**	**Total Price Euro (€)**	**Procurement Strategy**
1	**Project Management**	**-**	
2	**Engineering**	**-**	
3	**Implementation**	**€ 7,500**	
3.1	***Repatriate bulk data from Kabul to Europe***	**-**	NATO Courier
	Support to applying bulk encryption and packaging for transport	€ 7,500	SS to Thales
4	**Services**	**€ 10,000**	
4.1	**Additional transport costs**	€ 10,000	Commercial courier
Subtotal		**€ 17,500**	
Contingency		**€ 875**	
Total - Work Package 3		**€ 18,375**	

16.4 WP4 – Provide ISAF Archive Solution

WP4 – Provide JFCBS Archive Solution			
WBS #	**WBS Description**	**Total Price Euro (€)**	**Procurement Strategy**
1	**Project Management**	**€ 55,000**	
1.1	Project Management	€ 55,000	AOM BOA
2	**Engineering**	**€ 88,900**	
2.1	Design & Documentation	€ 63,500	AOM BOA
2.2	Installation Engineering	€ 25,400	AOM BOA
3	**Implementation**	**€ 201,400**	
3.1	Trusted digital repository implementation	€ 102,000	AOM BOA
3.2	NATO Workflow development	€ 68,000	AOM BOA
3.4	Training Services	€ 25,400	AOM BOA
3.5	Installation and configuration support at SHAPE DC	€ 6,000	AOM BOA
4	**Service Costs (Recurring)**	**€ 68,580**	
4.1	Archiving Soln' - Annual Supp (SW Assur, Prof Svcs)	€ 57,150	AOM BOA
4.2	Data Transformation Software Soln' - Annual Supp (SW Assur, Prof Svcs)	€ 11,430	AOM BOA
5	**Equipment**	**€ 215,400**	
5.2	***Provide Archive Solution***		
5.2.1	Archive Software	€ 152,400	AOM BOA
5.2.2	Data Conversion/Transformation Software	€ 38,000	AOM BOA
5.2.3	eMail Inbox Archive Conversion Software	€ 20,000	AOM BOA
5.2.3	SharePoint Archive Replication Software	€ 5,000	AOM BOA
Subtotal		**€ 629,280**	
Contingency		**€ 31,464**	
Total - Work Package 4		**€ 660,744**	

16.5 WP5 – Provision of the ISAF Archive (IOC)

WP5 – Provision of JFCBS Archive (IOC)			
WBS #	**WBS Description**	**Total Price Euro (€)**	**Procurement Strategy**
1	**Project Management**	**-**	
2	**Engineering**	**-**	
2.1	Configure the NS environment to be able to host temporarily each of the FASes	-	
2.2	Transfer data from AEP to the target JFCBS Archive staging storage	-	
2.3	Return the ISAF IKM storage (NetApp FAS3140), unclassified	-	NATO Courier
3	**Equipment**	**€ 10,000**	
3.1	Transport	€ 10,000	Commercial courier
Subtotal		**€ 10,000**	
Contingency		**€ 500**	
Total - Work Package 5		**€ 10,500**	

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16.6 WP6 – Reaching the Final Operation Capability of the ISAF Archive and early support

WP6 – Reaching the Final Operation Capability of the JFCBS Archive and early support			
WBS #	**WBS Description**	**Total Price Euro (€)**	**Procurement Strategy**
1	**Project Management**	**-**	
2	**Engineering**	**€ 343,900**	
2.1	***Develop technical procedures for data conversion***	-	
2.2	***Develop and document the records preservation processes***	-	
2.3	***Provide early technical support for the JFCBS Archive***	€ 17,500	AOM BOA
2.4	Development of FAS specific interfaces	€ 326,400	AOM BOA
Subtotal		**€ 343,900**	
Contingency		**€ 17,195**	
Total - Work Package 6		**€ 361,095**	

16.7 WP7 - Support to the ISAF Operational Records organizing phase for the ISAF Archive

WP7 –Support to the ISAF Operational Records organizing phase for the JFCBS Archive			
WBS #	**WBS Description**	**Total Price Euro (€)**	**Procurement Strategy**
1	**Project Management**	**-**	
2	**Engineering**	**€ 96,000**	
2.1	***Consultancy from FAS SMEs for analysis of FAS data schema***	€ -	
2.2	***Technical support to make the semi-active ready for operational records extraction***	€ -	
2.3	***Vendor technical support for the JFCBC Archive solution (20MD/y)***	€ 96,000	AOM BOA
Subtotal		**€ 96,000**	
Contingency		**€ 4,800**	
Total - Work Package 7		**€ 100,800**	

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Annex B – Systems that contain ISAF Operational Records

The table below identifies the current systems and repositories that contain data comprising the ISAF Operational Record at the time of writing this TBCE.

Those systems that are not under the custodianship of NATO (national systems etc) or are deemed out of scope for the collection of data that constitutes the operational record that is to be archived are also identified in the table.

It should be noted that this list is not final and is likely to be extended during project execution as additional systems are identified and qualified as hosting ISAF Operational Records. This list therefore is provided solely to support the cost estimate and the current state of investigation.

Area	#	Acronym	System Name	Description	Scope[2]
Joint		iGeoSIT	Interim Geographic Spatial Intelligence Tool	Mapping Tool. Geo-data viewer with operational overlays such as events etc. Provides authorised users with up-to-date geospatial intelligence information	In-scope
		JADOCS	Joint Automated Deep Operations Coordination System	A command and system tool that helps provide strategic coordination and situational awareness at the operational and tactical levels of combat.	Out-of-scope Under (US) National Custodianship; CX-I
		Jchat	Joint Tactical Chat	JChat is an instant messaging tool providing Chatrooms and a real-time Chat capability to support collaborative information sharing (including incidents reports and chat with other C2IS) and decision-making.	In-scope

[2] The Scope column identifies if the system contains operational records of value or not which need to be archived within the scope of the CUR. In-Scope – self explanatory and need to be addressed; Out-of-Scope, does not need to be addressed; Roll-up a sub-component/sub-system of a major functional system serving a specific CoI.

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Area	#	Acronym	System Name	Description	Scope2
		JOCWatch	JOC Watch Event Log	JOCWatch is a web-based incident/event logging and monitoring tool for the Combined Joint Operations Centre (CJOC) staff to manage, analyse and publish information on incidents of relevance to the command. JOCWatch maintains the “legal log” for the Commander.	In-scope
		NIRIS	Network Interoperable Real-Time Information Services	NIRIS provides a real-time C2 track information to support operational pictures for air, land and maritime operations.	In-scope
		ICC (ACCS)	Integrated Command and Control (Air Command and Control System)	NATO-wide Integrated Command and Control for Air Operations" Provides Recognized Air Picture (RAP), Situation Awareness (SA), … Contains Planning tools: JTS, TST and FAST V2.8.2 contains LSID to monitor BMD Integrated Training Capability (ITC, providing simulated RAP) is currently (Feb 13) not compatible with 2.8.2 At Operational level and above, will be replaced by AirC2IS. At Tactical level and below, ICC will be replaced by ACCS.	In-scope
		JTS FAST	Joint Targeting System Flexible Advanced C2 Services for joint Time sensitive targeting (TST)	Joint targeting planning systems: JTS for normal targeting, FAST for TST. Component of ICC (ACCS).	Roll-up
		CIDNE	Combined Information Data Network Exchange system	CIDNE is an ISAF directed tool to capture, correlate and analyze Events, Incidents, Personalities, Organizations, Units, Facilities, Contracts and associated data (links with JOIIS)	Out-of-scope Under (US) National Custodianship

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Area	#	Acronym	System Name	Description	Scope2
		PlaTo	Planning & Tasking Tool	Perform integrated theatre missle defence planning Within NCS, PlaTO will be replaced by AirC2IS	Out-of-scope Under (US) National Custodianship; accessed remotely
		LC2IS	Land C2 Information System		In-scope
Intel		AOSS	ACO Open Source System	Web based application for storing Open Source information. Provides Open Source News feed to a secure environment. Provides access to JANES Reference Library, Agence France Presse, Factiva sources, and more.	Out-of-scope Non-NATO, Internet-sourced information
		JOIIS	Joint Operations Intelligence Information System	JOIIS is a NATO-wide situation awareness tool which supports management and analysis of the Battle Space Objects (BSOs) relevant to the local commanders.	In-scope
		NITB	NATO Intelligence Toolbox	NITB is an integrated software capability which provides a collection of intelligence tools in a single application allowing the customer to stay in the same environment while working with different types of information.	In-scope
		SDA	SIGINT/SEWOC Database Aplication	NATO SIGINT database and analysis tool for deployed SIGINT & EW Operations Centres (SEWOC).	In-scope
		SIGINT/COINS	Signals Intelligence Communications and Information System	NATO system for the transmittal, receipt and analysis of signals intelligence (up to the CTS/B level) between authorized end-users.	In-scope
		HMART	HUMINT Management and Reporting Tool	HUMINT Management and Reporting Tool	In-scope

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Area	#	Acronym	System Name	Description	Scope2
Geo		CoreGIS	Geographical Information System	Provides GIS capabilities to NATO Commands, with ArcGIS as the map programme	In-scope
		Terra Explorer Viewer	Terra Explorer Viewer	Mapping Tool for Geo Data. Installer only.	In-scope
METOC		HMETOC	Hydrography Meteorological Oceanography (cancelled)	Hydrography Meteorological and Oceanography Data Collection and Analysis	Out-of-scope Not in use.
		NAMIS	NATO Automated Meteological Info System (will be replaced by VISME)	Meteorological Data Collection and Analysis tool	In-scope
		VISME	Visual Meteorological Enclave	Replacement of NAMIS (IOC Sep 13, FOC Dec 13)	Out-of-scope Not in use.
Logistics		LOGFAS	Logistic Functional Area Services	Logistics core planning tool with common Logistics database LOGBASE. Includes modules ACROSS, ADAMS, CORSOM, EVE, GeoMan, LDM, LOGREP, SDM and SPM. Will be replaced by Log FS	In-scope
		ACROSS	Allied Commands Resource Optimisation Software System	Component of LOGFAS	Roll-up
		ADAMS	Allied Deployable and Movement System	Component of LOGFAS	Roll-up
		CORSOM	Coalition Reception Staging and Onward Movement	Component of LOGFAS	Roll-up
		EVE	Effective Visible Execution	Component of LOGFAS	Roll-up
		LOGREP	Logistic Reporting	Component of LOGFAS	Roll-up

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Area	#	Acronym	System Name	Description	Scope2
CIS		SPECTRUM XXI	Spectrum 21	Frequency Management Database and Engineering tool	Out-of-scope Under (US) National Custodianship; accessed remotely
		SDE	Service Desk Express	NCI Agency LAN Incident Management Tool	In-scope
Personnel		APMS	Automated Personnel Management System	Manages all NATO PE and CE posts including the identification of the qualifications and competencies required. Includes MAPS. Administered by ACO. JFCBS J1 log in remotely.	In-scope Under NATO Custodianship on AIS; accessed remotely. Out-of-scope for ISAF Transfer
		PERMAN	Personnel Management	LWR payroll system (on NU network))	In-scope
		DATABASE/PAYROLL TOOL	DATABASE/PAYROLL TOOL	ICC/LCH Personnel Management and payroll database	In-scope
		PMIS	Personnel Management Information System	Personnel Management and Payroll system for NATO Civilian Staff (on NS network)	In-scope
		FinS	Financial Services system	Central NATO (Bi-SC AIS) Accounting & Financial Management System which provides consistency in accounting practices and compatibility between HQs. Only on NU. Uses Oracle Db.	In-scope
BSG		PRIAMOS	Personnel registration and identification and Acces mannagement Overarchaing	Used by the Pass & Permits cell	In-scope

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Area	#	Acronym	System Name	Description	Scope2
		NDSS	NATO Depot Support System	Supply Management and Property Accounting (Warehouse Management)	In-scope
		TRANMAN	Transportation Evaluation Tool (PAN)		In-scope
		TRISTAN PHOENIX	Fuel Software Tool (PAN)	Fuel Software Tool (PAN)	In-scope
		Sharepoint 2007	Sharepoint	Microsoft collaborative system	In-scope Collection incorporate d into DHS
		DHS	Document Handling System	Primary system for creating, collecting and storing information.	In-scope
		IJC PORTAL			In-scope
		AMN Ent Portal	Microsoft Office Share Point Portal server 2003/SP2	Primary IM service for sharing information and collaborating by allowing users to pull any necessary data. Primary means to make published documents available within the HQ and throughout the NATO community.	In-scope
		TTE	Tasker Tracker Enterprise	NATO workflow management tool: efficient way of coordinating staff work in the electronic environment	In-scope
		AMN INT-CORE	AMN Integration Core	An integration system that supports the Coalition Mission Threads (CMT) representing the operational business processes of the ISAF mission.	In-scope
		Adobe Connect	Adobe Connect	An enterprise web conferencing software solution for secure web meetings, eLearning and webinars.	In-scope
		TACTIC	Theatre Access Control & Threat Identification Capability	A pan ISAF IAM solution, including biometric security passes and access tracking.	In-scope
CES		FAS SQL SERVERS	FAS SQL Servers	Back-office Database servers supporting multiple FASs.	In-scope

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Area	#	Acronym	System Name	Description	Scope2
		NATO RELEASE SERVER	NATO Release Server	A tool to stage the transfer of information between Mission and NATO networks.	Out-of-scope Duplicated records
		Network Fileshares	Network Fileshares	Network based fileshares which contain unstructured and structured data for individuals and groups of users.	In-Scope
		eMail	Informal Messaging (eMail)	eMail is a core collaborative messaging tool used to support both ad-hoc and formal business processes. Emails from ranks OF-5 or above are considered operational records.	In-Scope

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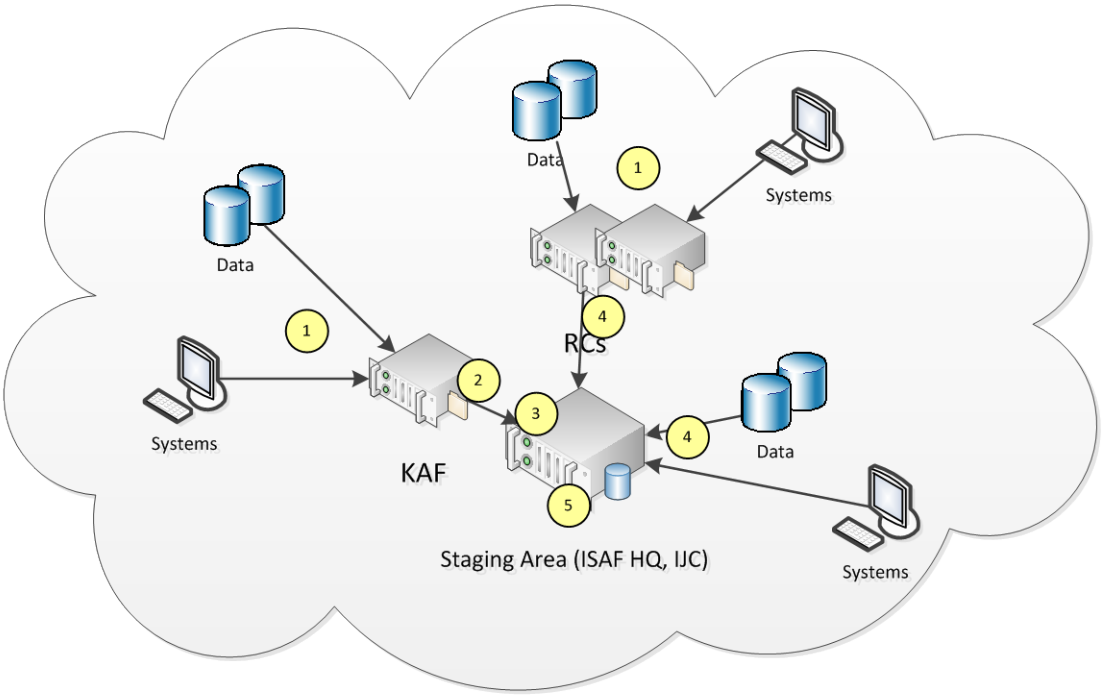
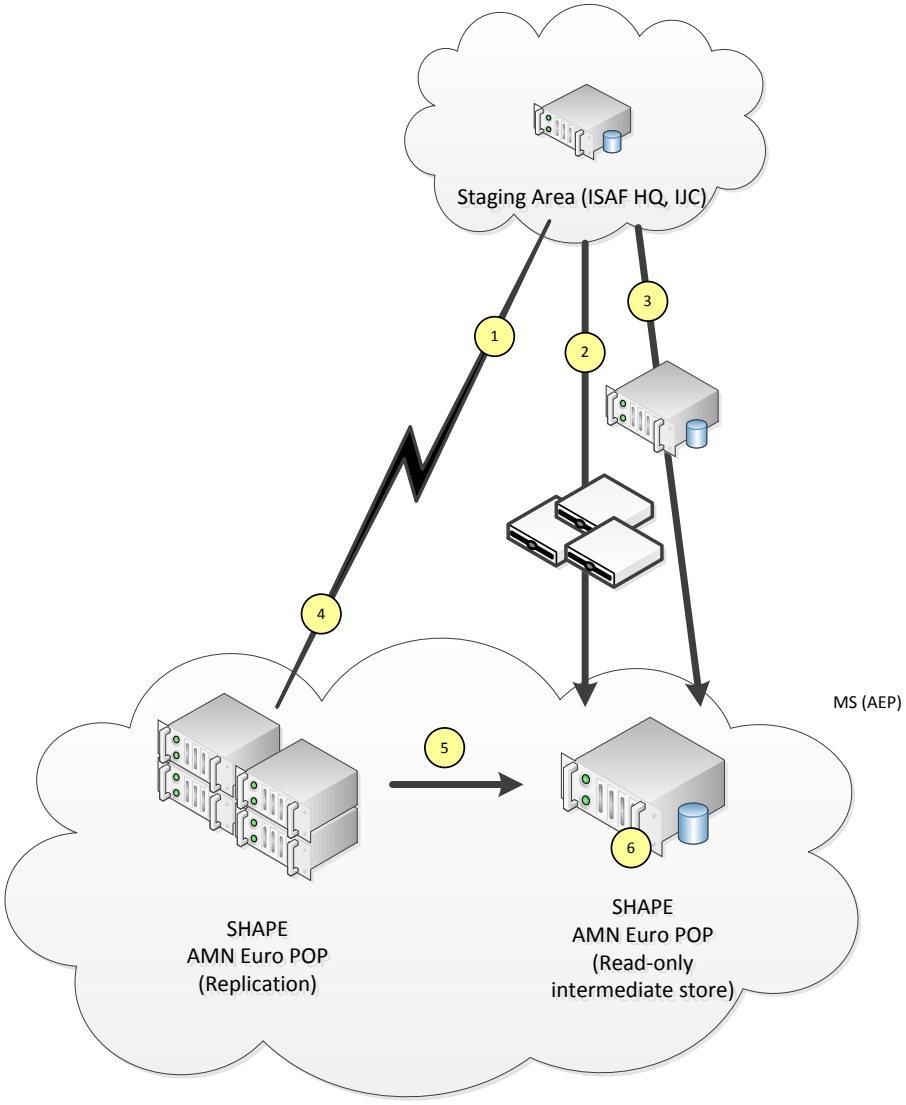
Annex C – Target architecture sequence diagrams

Stage 1 – In-theatre data consolidation



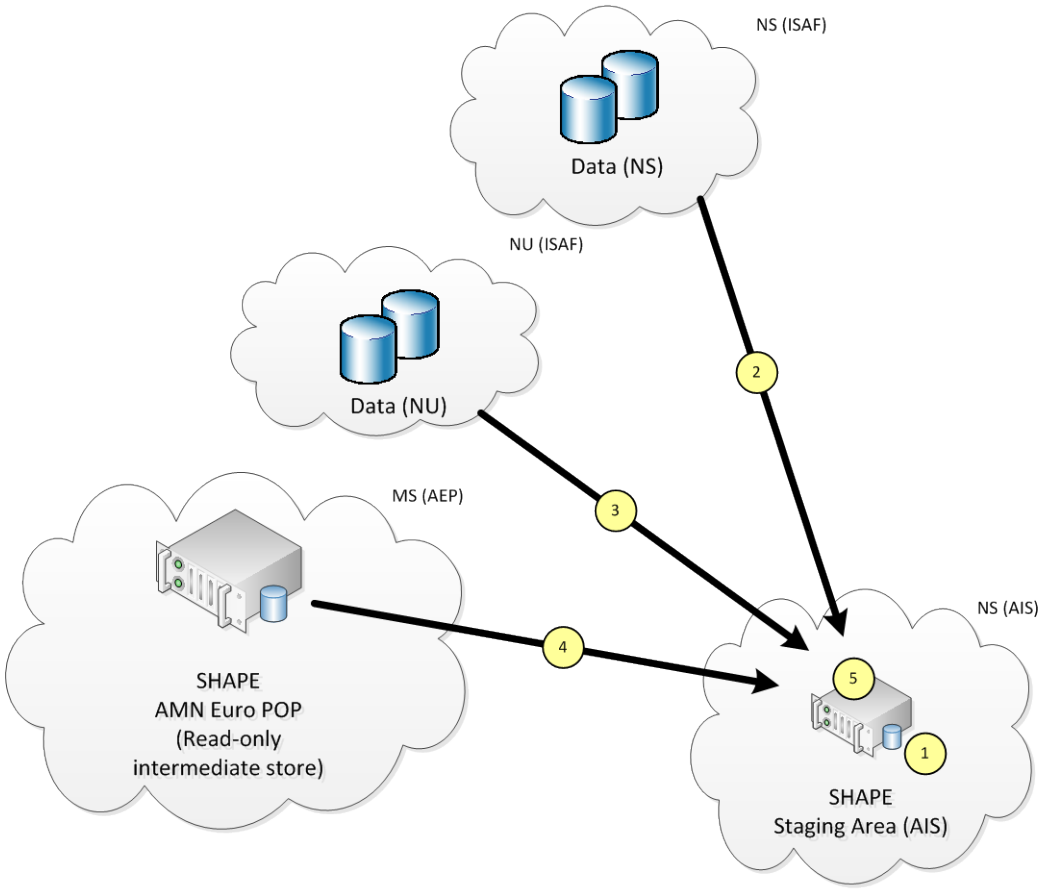
1. Consolidation of data and system images
2. Transfer of storage hardware (NetApp) from KAF to ISAG HQ
3. Rebuilding of storage area at ISAF HQ
4. Transfer of data and system images to staging area at ISAF HQ
5. Consolidation of data and systems at ISAF HQ staging area

Stage 2 – Transfer to out-of-theatre store



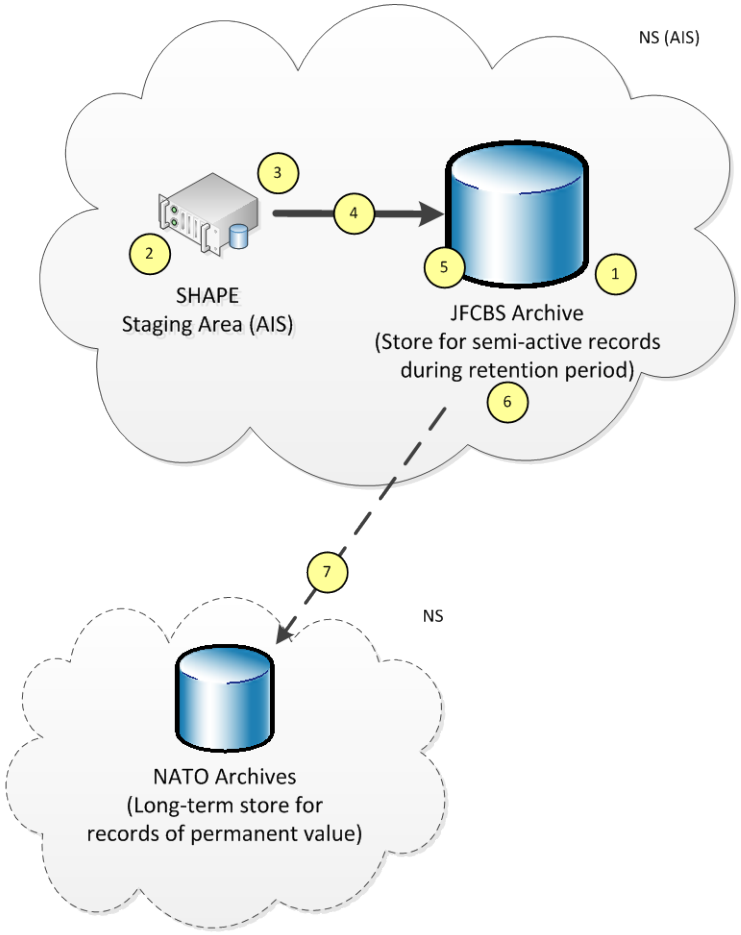
1. Continuous on-going replication of MS data (bi-directional)
2. Transfer via portable encrypted drives for pre-selected data
3. Bulk transfer of entire storage area
4. Delta replication for MS data after uplift via portable drive of bulk storage
5. Transfer of replicated data to intermediate store
6. Consolidation of transferred MS data at AEP intermediate store

Stage 3 – Consolidation at AIS staging area



1. Creation of AIS staging area for consolidation of all ISAF data
2. Transfer of NS data from theatre to AIS staging area (via portable drives or NS network)
3. Transfer of NU data to AIS staging area (via portable drives)
4. Transfer of MS data from AEP intermediate store to AIS staging area
5. Consolidation, processing, and management of all ISAF data

Stage 4 – Archiving of semi-active records (and disposition of inactive records of permanent value)



1. Create JFCBS Archive
2. Separation of data from system context
3. Creation of submission information packages (SIPs) for semi-active records
4. Transfer of SIPs to JFCBS Archive, change of custodianship to JFCBS
5. Process and manage semi-active records
6. At the end of the retention period: create SIP for records of permanent value – or – disposal/destruction of records.
7. Transfer to NATO Archives, change of custodianship to NATO Archives