### SECRET/NOFODY

### 21 November 2018

The Honorable Richard C. Shelby Chairman Committee on Appropriations United States Senate Washington, DC 20510

Dear Mr. Chairman:

- (U) Pursuant to sections 171a(e) and (j)(2) of title 10, United States Code, enclosed is the Annual Report on the Activities of the Council on Oversight of the National Leadership Command, Control, and Communications System (NLC3S), which includes the integrated tactical warning and attack assessment determination.
- (U) The report captures the Council's actions in 2017, along with proposed activities to be undertaken during Future Years Defense Program 2019–23. Based on Council actions over the past year, we have continued to invest significant additional resources to address NLC3S gaps and deficiencies. The nuclear command, control, and communications (NC3) enterprise remains capable of accomplishing its current operational requirements; however, threats to NC3 capabilities are increasing. Many of the critical systems, platforms, and facilities comprising the NC3 architecture are approaching, at, or past planned life cycles. Continued budgetary support is required to modernize aging systems and architectures to ensure the enterprise continues to remain safe, secure, and reliable.
- (U) We appreciate your continued concern for and support of our men and women in uniform. An identical letter is being sent to the other congressional defense committees.

Sincerely,

General, V.S. Air Force

Vice Chairman of the Joint Chiefs of Staff

ELLEN M. LORD

Under Secretary of Defense for Acquisition

and Sustainment

Enclosure: As stated

cc:

The Honorable Patrick J. Leahy

Vice Chairman

## SECRET/MOFORM

## 21 November 2018

The Honorable Rodney P. Frelinghuysen Chairman Committee on Appropriations U.S. House of Representatives Washington, DC 20515

Dear Mr. Chairman:

- (U) Pursuant to sections 171a(e) and (j)(2) of title 10, United States Code, enclosed is the Annual Report on the Activities of the Council on Oversight of the National Leadership Command, Control, and Communications System (NLC3S), which includes the integrated tactical warning and attack assessment determination.
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Sincerely.

PAUL J. SELVA

General, V.S. Air Force

Vice Chairman of the Joint Chiefs of Staff

ELLEN M. LORD

Under Secretary of Defense for Acquisition and Sustainment

Enclosure: As stated

cc:

The Honorable Nita M. Lowey

Ranking Member

### 21 November 2018

The Honorable William M. "Mac" Thornberry Chairman Committee on Armed Services U.S. House of Representatives Washington, DC 20515

Dear Mr. Chairman:

- (U) Pursuant to sections 171a(e) and (j)(2) of title 10, United States Code, enclosed is the Annual Report on the Activities of the Council on Oversight of the National Leadership Command, Control, and Communications System (NLC3S), which includes the integrated tactical warning and attack assessment determination.
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General, V.S. Air Force

Vice Chairman of the Joint Chiefs of Staff

ELLEN M. LORD

Under Secretary of Defense for Acquisition

and Sustainment

and mand

Enclosure: As stated

cc:

The Honorable Adam Smith Ranking Member

### 21 November 2018

The Honorable James M. Inhofe Chairman Committee on Armed Services United States Senate Washington, DC 20510

Dear Mr. Chairman:

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Vice Chairman of the Joint Chiefs of Staff

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Under Secretary of Defense for Acquisition

and Sustainment

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Enclosure: As stated

cc:

The Honorable Jack Reed Ranking Member SECRETANGEODA

# **Department of Defense**



The estimated cost of this report or study for the Department of Defense (DoD) is approximately \$14,000 in fiscal years 2017–2018. This includes \$11,000 in expenses and \$2,940 in DoD labor. Generated on 2018May07 RefiD: E-5B814FB

2018

(U) Title 10 USC §171a(e) and (j)(2) National Leadership Command, Control, and Communications System Annual Report and Integrated Tactical Warning and Attack Assessment Determination

Classified By: Dana Deasy
Renown L. 1(a)(f)(a)
Dealassify One 31 May 2013

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## (U) INTRODUCTION

- (U) The "National Defense Authorization Act (NDAA) for Fiscal Year (FY) 2014, (Public Law 113-66)," in section 1052, amends Chapter 7 of title 10, United States Code, to add section 171a. This new section establishes within the Department of Defense (DoD) a "Council on Oversight of the National Leadership Command, Control, and Communications System" (NLC3S). NDAA section 1052 also requires (as amended by NDAA for FY 2017) that "During the period preceding January 31, 2021, at the same time each year that the budget of the President is submitted to Congress pursuant to section 1105(a) of title 31, and from time to time after such period at the discretion of the Council, the Council shall submit to the congressional defense committees a report on the activities of the Council. Each report shall include the following:
  - (1) (U) A description and assessment of the activities of the Council during the previous fiscal year. (Section I)
  - (2) (U) A description of the activities proposed to be undertaken by the Council during the period covered by the current future-years defense program under section 221 of this title. (Section II)
  - (3) (U) Any changes to the requirements of the command, control, and communications system for the national leadership of the United States made during the previous year, along with an explanation for why the changes were made and a description of the effects of the changes to the capability of the system. (Section III)
  - (4) (U) A breakdown of each program element in such budget that relates to the system, including how such program element relates to the operation and sustainment, research and development, procurement, or other activity of the system. (Section IV (Enclosure 1))
- (5) (U) An assessment of the threats and vulnerabilities described in the reports and assessments collected under subsection (f) during the previous year, including any plans to address such threats and vulnerabilities. (Section V)
- (6) (U) An assessment of the readiness of the command, control, and communications system for the national leadership of the United States and of each layer of the system, as that relates to nuclear command, control, and communications. (Section VI)
- (U) The DoD submits the following report in response to that request.

## I. (U) ACTIVITIES OF THE COUNCIL DURING CALENDAR YEAR (CY) 2017

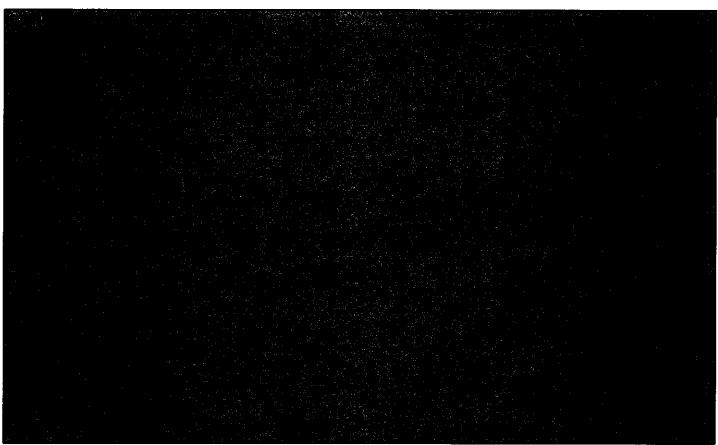
A. (U) GENERAL. In calendar year (CY) 2017, the Council convened three in-person/video teleconference meetings and a fourth meeting hosted by the co-chairs to discuss resource prioritization in the performance of specified NLC3S¹ responsibilities. In addition, there were three in-person meetings of the four-star level National Leadership Command Capability (NLCC) Executive Management Board (EMB) and five in-person meetings of the two-star level NLCC Senior Steering Group (SSG) that covered some subjects not presented to the Council. Numerous working groups (WG) and sub-working groups feed the Council governance process. These include the Nuclear Command, Control, and Communications (NC3) Issues WG; the Military Strategic and Tactical Relay (MILSTAR) to Advanced Extremely High Frequency (AEHF) Transition WG; the Low Frequency/Very Low Frequency WG; the NC3 Assessments WG; the Hybrid Solution WG; and

<sup>&</sup>lt;sup>1</sup> NLC3S is the congressional term for what the DoD refers to as the National Leadership Command Capability (NLCC).

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the NC3 System High Altitude Electromagnetic Pulse (HEMP) WG (NC3SHWG), which generally meet once every one to two months.

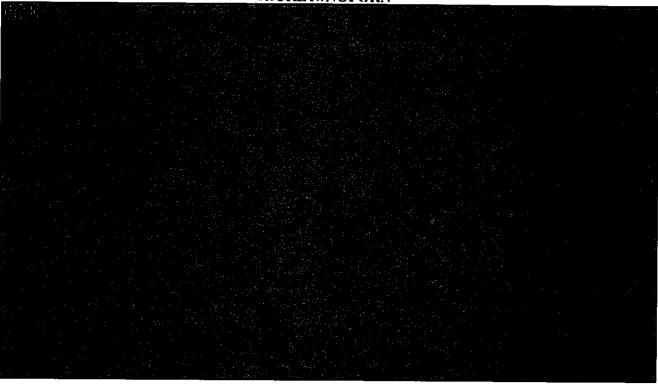
- B. (U) PERFORMANCE ASSESSMENTS (INCLUDING INTEROPERABILITY) (Office of Primary Responsibility (OPR): Chairman of the Joint Chiefs of Staff (CJCS). Offices of Collateral Responsibility (OCRs): White House Military Office (WHMO); DoD Chief Information Officer (CIO)).
- (U) Work continued on the 2015 Deputy Secretary of Defense-directed NLCC and NC3 System Enterprise Review findings and recommendations. The Council reviewed the status of the 13 major recommendations and agreed to close the NLCC/NC3 cybersecurity recommendation and the Navy's portion of the NLCC/NC3 Operations and Maintenance Training and Units and Organization Manning Recommendation. Air Force Organizational Task Force (TF), NLCC and NC3 Engineering TF, and E-6 Requirements Recommendations remain closed. The remaining items report satisfactory progress.



(U) Additional performance assessment activities included:



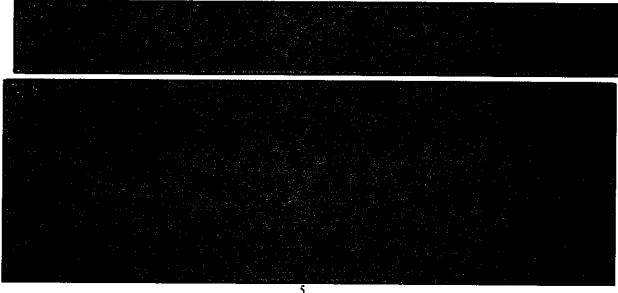
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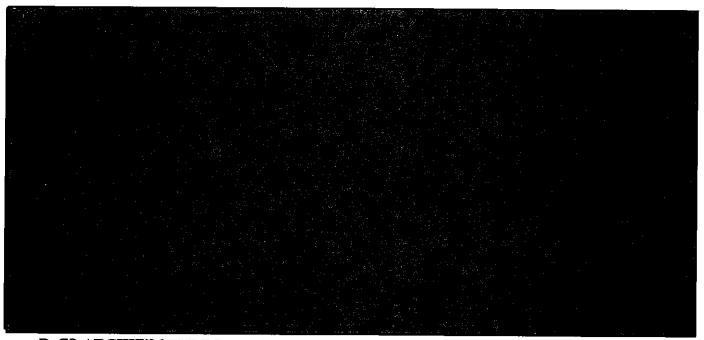
C. (U) VULNERABILITY IDENTIFICATION AND MITIGATION (OPRs: USD for Intelligence (USD(I); Joint Staff; Commander, U.S. Strategic Command (CDRUSSTRATCOM). OCRs: National Security Agency (NSA); DoD CIO).



- o (U) Worldwide Nuclear Threats (Russia, non-Russia; Electromagnetic Pulse (EMP)).
- o (U) Electronic Warfare (EW) and EW/Cyber Threats to NLCC.
- o (U) Counter Space Weapon Threats to NLCC.

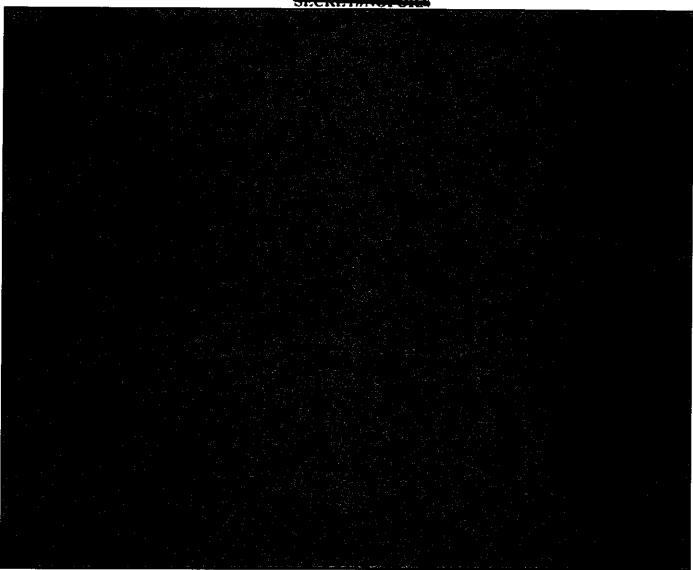


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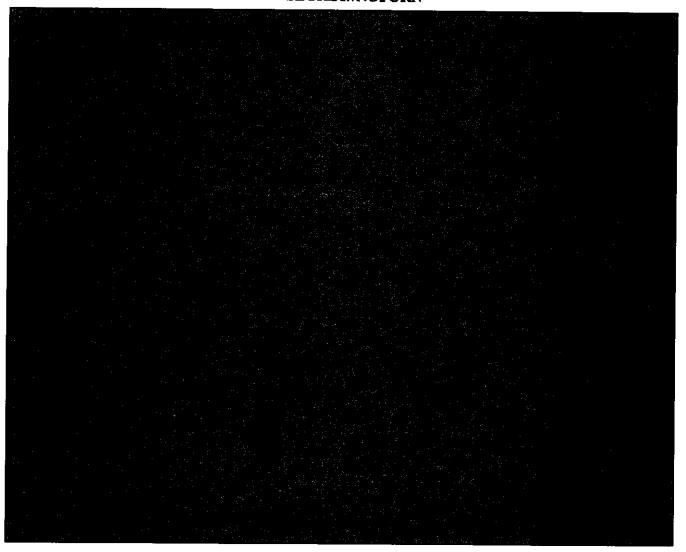
D. (U) ARCHITECTURE DEVELOPMENT (OPR: Defense Information Systems Agency (DISA). OCRs: NSA; CDRUSSTRATCOM; Commander, U.S. Northern Command; Services)

(U) In 2017, DISA/Joint Systems Engineering and Integration Office (JSEIO) stood up the NLCC Systems Engineering and Architecture Review Board (SEAR Board) to fulfill its Deputy Secretary of Defense task to "provide systems engineering and integration functions (including, but not limited to requirements, configuration management, technical assessments, and architecture)." It meets on a quarterly basis and the working groups meet monthly. Figure 1 below depicts the SEAR Board's organizational structure.



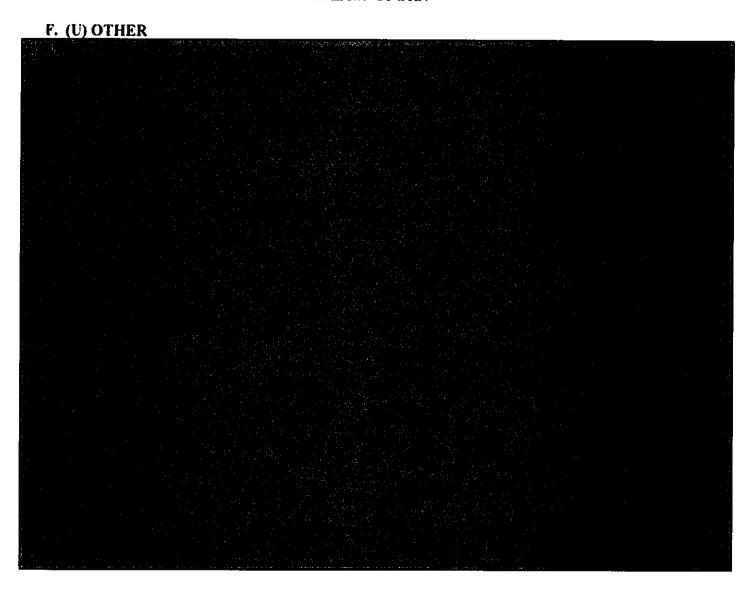
- (U) DISA/JSEIO briefed progress on the NLCC Enterprise Architecture (EA) and the NLCC Reference Architecture to the NLCC SSG/JSEIO Executive Committee in November 2017. Originally developed in Microsoft Visio, the EA is now being transitioned to model-based systems engineering tool MagicDraw while also being federated across the NLCC community.
- (U) The NLCC Modeling and Simulation project (currently funded for FY 2017–21) is providing an additional decision making tool, the Modeling and Simulation for Strategic Communications (MASSC). This tool was enhanced in 2017 to better depict force direction modeling capability, completing the architecture for all current peacetime and wartime communications systems, as well as near-future thin-line systems. MASSC uses individual mission thread assessments (e.g., Very Low Frequency, decision conferencing) to determine ability to meet performance requirements in order to identify gaps.
- E. (U) RESOURCE PRIORITIZATION (OPR: All)

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 (U) In December 2017, per section 1052(f) (3) of the NDAA for FY 2014, the Council cochairs informed the congressional committees of concerns with congressional marks on the Senior Leader Enterprise (PE 0303122K), E-6 Series (PE0101402N), E-4 (PE0302015F), National Airborne Operations Center (NAOC) Recapitalization (PE0604288F), and Minimum Essential Emergency Communications Network (MEECN) (PE0303131F).

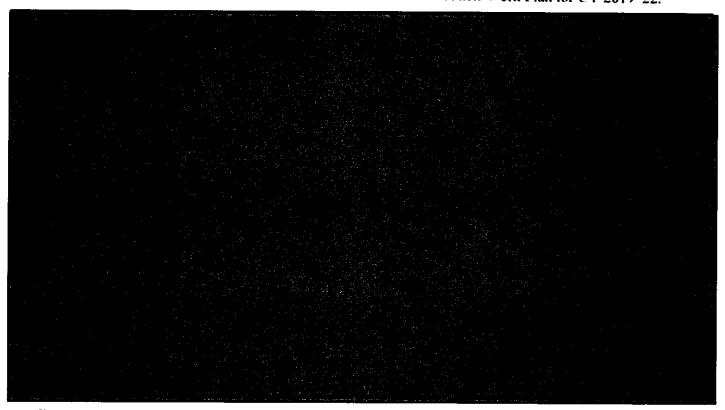
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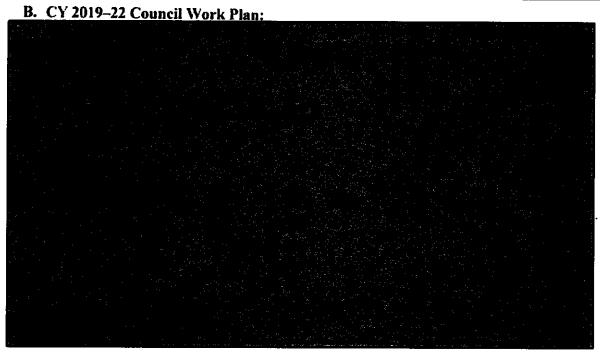


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# II. (U) ACTIVITIES PROPOSED TO BE UNDERTAKEN BY THE COUNCIL DURING THE CURRENT FUTURE YEARS DEFENSE PROGRAM

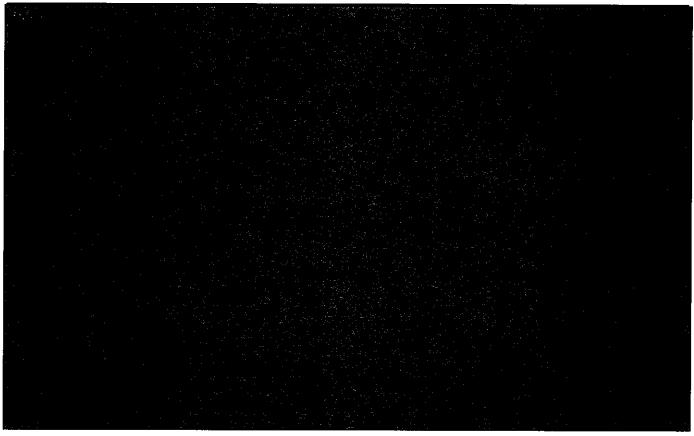
Table 3 is the Council Work Plan for CY 2018. Table 4 is the Council Work Plan for CY 2019-22.





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## III. (U) CHANGES TO NLC3S REQUIREMENTS MADE DURING PREVIOUS YEAR



(U) FY 2017 NDAA language added, on an annual basis, a determination by the Council as to "whether the integrated tactical warning and attack assessment system and its C2 system have met all warfighter requirements for operational availability, survivability, and endurability." While this determination is not required to be reported here, it is included. (Enclosure 2)

(U) FY 2018 NDAA language added Council reporting actions as described in Section 1651, Annual Assessment of Cyber Resiliency of NC2 System; section 1654, Oversight of Delayed Acquisition Programs by the Council; Section 1657, Oversight of Aerial-Layer Programs by the Council; and section 1658, Security Classification Guide for Programs Relating to NC3 and Nuclear Deterrence. These reports will be submitted separately as detailed in the NDAA language.

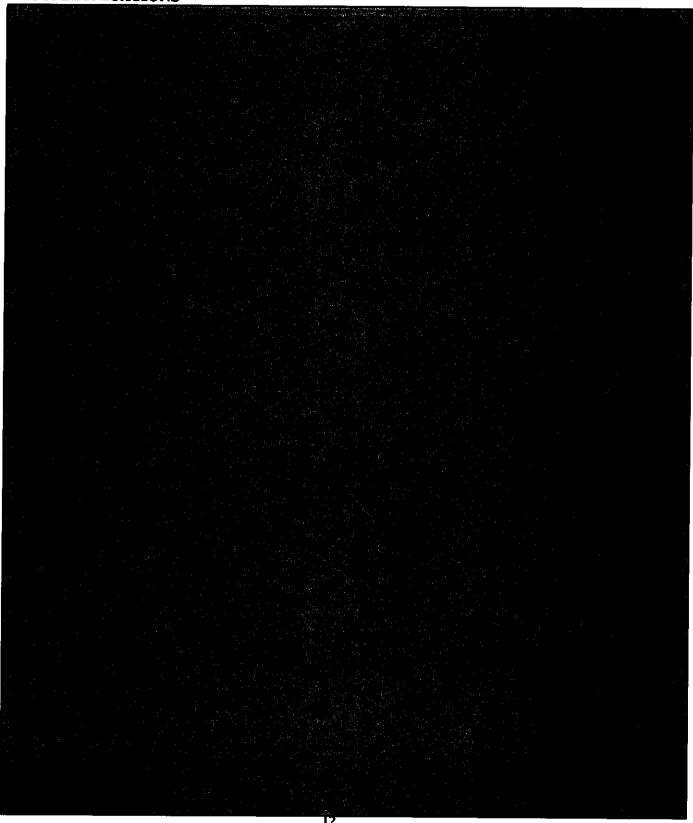
IV. (U) BREAKDOWN OF NLC3S PROGRAM ELEMENTS. See Enclosure 1.

V. (U) AN ASSESSMENT OF THE THREATS AND VULNERABILITIES DESCRIBED IN THE REPORTS AND ASSESSMENTS COLLECTED UNDER SECTION I.B. DURING THE PREVIOUS YEAR, INCLUDING ANY PLANS TO ADDRESS SUCH THREATS AND VULNERABILITIES.

See Section I.C.

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# VI. (U) ASSESSMENT OF READINESS OF NUCLEAR COMMAND, CONTROL, AND COMMUNICATIONS



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(b)(1)			

VII. (U) FY 2017 NDAA SECTION 1661 (10 USC 171(j(2))) ON WHETHER THE INTEGRATED TACTICAL WARNING AND ATTACK ASSESSMENT SYSTEM AND ITS COMMAND AND CONTROL SYSTEM HAVE MET ALL WARFIGHTER REQUIREMENTS FOR OPERATIONAL AVAILABILITY, SURVIVABILITY, AND ENDURABILITY.

See Enclosure 2.

SIGNED:

PAUL J. SELVA General, U.S. Air Force

Vice Chairman of the Joint Chiefs of Staff

ELLEN M. LORD

Under Secretary of Defense

Elleworkerd

for Acquisition and Sustainment

### SECRET/NOFODN

### **GLOSSARY OF TERMS**

**ABNCP** Airborne Command Post

**AEHF** Advanced Extremely High Frequency

AF Air Force

AFSPC Air Force Space Command Αo operational availability AoA analysis of alternatives C2 Command and Control

**C3** Command, Control, and Communications

C4 Command, Control, Communications, and Computers

CBA Capability-Based Assessment

CDRUSSTRATCOM Commander, U.S. Strategic Command CICS Chairman of the Joint Chiefs of Staff

CJCSI Chairman of the Joint Chiefs of Staff Instruction

CMS Crisis Management System COG Continuity of Government COOP Continuity of Operations CVR Common VLF Receiver DIA Defense Intelligence Agency

Defense Injection/Reception Emergency Action Message C2 Terminal DIRECT

Defense Information Systems Agency DISA DNI Director of National Intelligence

DoD CIO Department of Defense Chief Information Officer

DRSN Defense Red Switch Network DSP Defense Support Program

DSP-A Defense Support Program - Augmentation

DSS Decision Support System

DZ Digitalization

DTRA Defense Threat Reduction Agency

EA Enterprise Architecture

**EMB Executive Management Board** 

**EMP** electromagnetic pulse EW electronic warfare

Family of Advanced Beyond Line-of-Sight-Terminal FAB-T

**FPAK** force package

**FSBS** Fleet Submarine Broadcast System

**GASNT** Global Aircrew Strategic Network Terminal **HEMP** 

High-Altitude Electromagnetic Pulse

HEO highly elliptical orbit

**HPTS** High Power Transmission System ICD Initial Capabilities Document

INSER Integrated Nuclear Survivability and Endurability Report **ISPAN** Integrated Strategic Planning and Analysis Network ITW/AA Integrated Tactical Warning/Attack Assessment

**JROC** Joint Requirements Oversight Council

Joint Requirements Oversight Council Memorandum **JROCM** 

### SECDET/NOFODN

JSEIO Joint Systems Engineering and Integration Office

LFTS Low-Frequency Transmit System

MASSC Modeling and Simulation for Strategic Communications
MEECN Minimum Essential Emergency Communications Network

MGS Mobile Ground System

MILSTAR Military Strategic and Tactical Relay
MPAS Mission Planning and Analysis System

MRT Miniature Receive Terminal

MMRT Modified MRT

MR-TCDL Multi-Role Tactical Common Data Link

MW missile warning

NC2 Nuclear Command and Control

NC3 Nuclear Command, Control, and Communications

NC3SHWG
NC3 System HEMP Working Group
NAOC
National Airborne Operations Center
NCCS
Nuclear Command and Control System
NDAA
National Defense Authorization Act

NIE National Intelligence Estimate

NLC3S National Leadership Command, Control, and Communications System

NLCC National Leadership Command Capability
NORAD North American Aerospace Defense Command

NPES Nuclear Planning and Execution System

NSA National Security Agency

NUDET nuclear detonation

OCR office of collateral responsibility

OPLAN Operations Plan

OPR office of primary responsibility

PAGCN Phoenix Air-Ground Communications Network
PNVC Presidential and National Voice Conferencing

POA&M Plan of Action and Milestones POM Program Objective Memorandum

SATCOM satellite communications
SBIRS Space-Based Infrared System

SEAR Board Systems Engineering and Architecture Review Board

SecDef Secretary of Defense

SECN Survivable Emergency Conferencing Network

SSG Senior Steering Group

TF task force

UMM (LF) Universal Minimum Essential Emergency Communications Network

(MEECN) Mode

USEUCOM United States European Command
USNORTHCOM United States Northern Command
USSTRATCOM United States Strategic Command
VLF/LF very low frequency/low frequency

VOLT Validated On-Line Threat

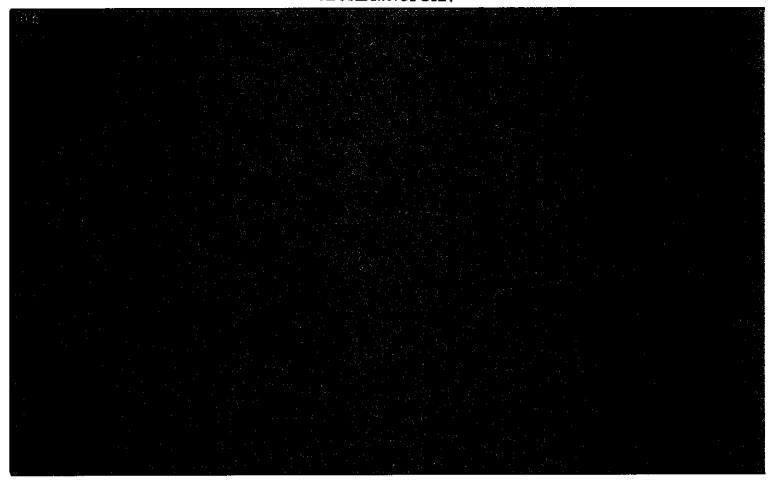
VPS Very Important Person Protected SATCOM Terminal

WG working group

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WHMO WWSVCS White House Military Office World Wide Secure Voice Conferencing System

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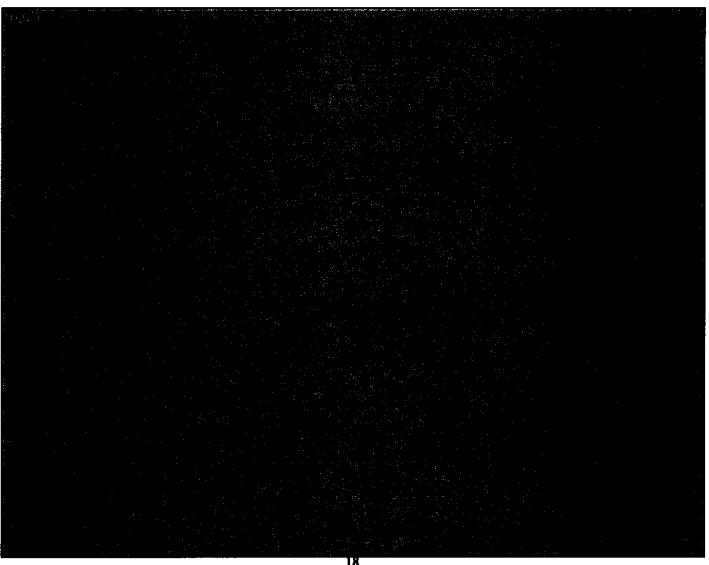




## 1. (U) Introduction

a. (U) In a 14 February 2017 memorandum from DoD CIO: "Section 1661 of National Defense Authorization Act of 2017 (Public Law 114-328) ((10 USC 171(j(2)) directed the Council on Oversight of the National Leadership Command, Control, and Communications System (NLC3S), to determine whether the Integrated Tactical Warning and Attack Assessment (ITW/AA) system and its C2 system have met all warfighter requirements for operational availability (Task #1), survivability (Task #2), and endurability (Task #3)," DoD CIO tasked USSTRATCOM and NORAD to brief jointly their assessment to the NLC3S.

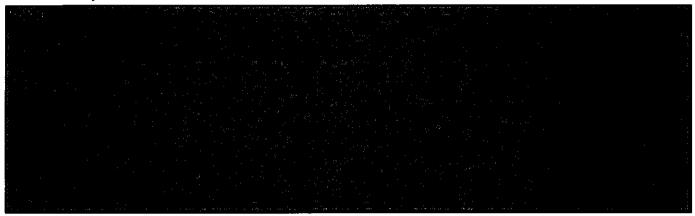
## 2. (U) Executive Summary



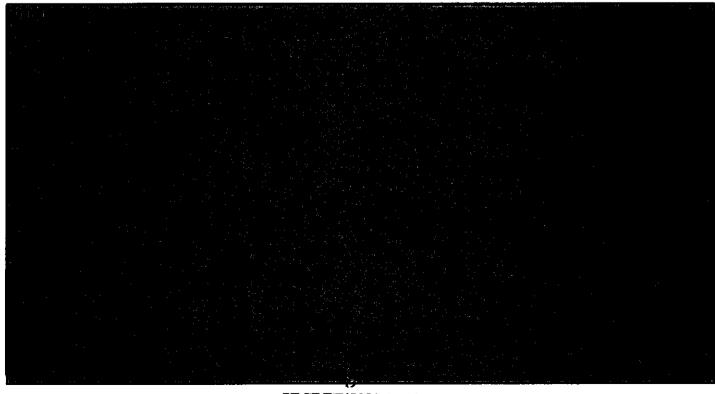
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### 3. (U) Background

a. (U) As a critical component of the U.S. Nuclear Command and Control System (NCCS), the ITW/AA System is required to provide unambiguous, timely, accurate, and continuous (24/7 days a week) tactical warning and attack assessment information to the President, SecDef, CJCS, and Combatant Commanders on a continuous basis throughout a conflict or other national crisis (CJCSI 6210.02C).



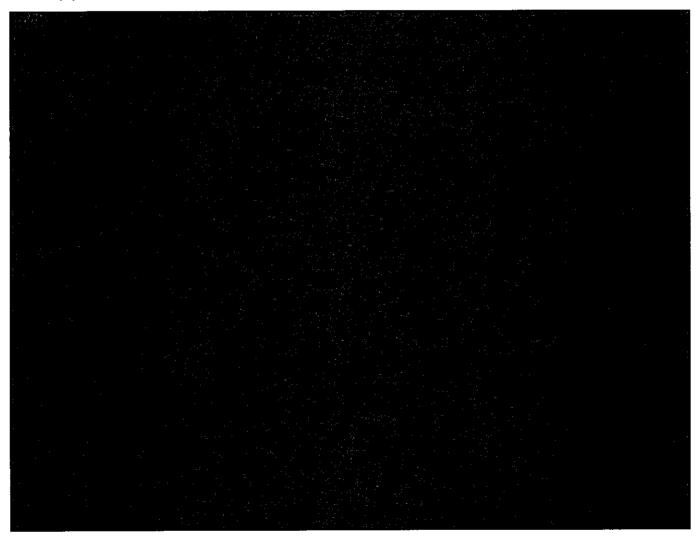
c. (U) In reference to the ITW/AA responsibilities delineated in CJCSI 5119.01C and CJCSI 6210.02C, CDRUSSTRATCOM and Commander NORAD jointly assign USSTRATCOM J-3 and NORAD J-3 as the ITW/AA Functional Managers. USSTRATCOM and NORAD staffs are responsible for working directly with, and, as necessary, establishing agreements with, the Office of the SecDef, the Joint Staff, other Combatant Commands, Military Services, defense agencies, non-defense agencies, and foreign governments to ensure the successful accomplishment of the ITW/AA mission.



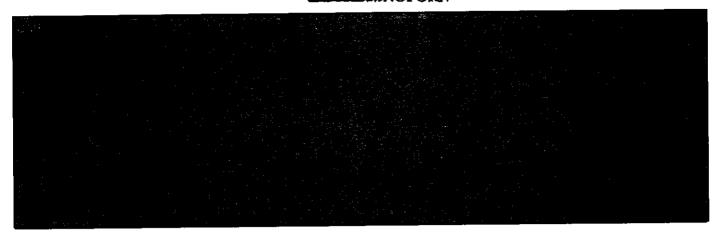
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f. (U) The ITW/AA endurable missions use facilities, equipment, and systems that are information sources, correlation nodes, forward user systems, personnel at those locations, and communications paths between all components. The ITW/AA endurable missions require unambiguous, timely, accurate, and continuous information. Endurable elements will endure through all phases of conflict with predictable and graceful performance degradation as the threat environment becomes increasingly hostile. Endurable systems will meet at least the minimum requirements for a survivable system and will be technically designed to avoid and/or withstand physical destruction from nuclear weapons (e.g., mobile or physically hardened or sufficiently proliferated to ensure survival after attack by the most stressful projected threat). The ballistic MW/NUDET detection capabilities are required to have endurable elements (CJCSI 6210.02C).

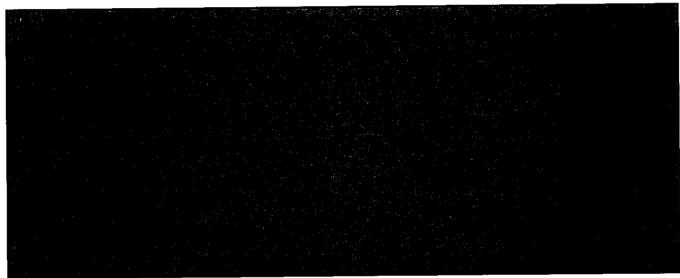
## 4. (U) FY 2017 ITW/AA Assessment



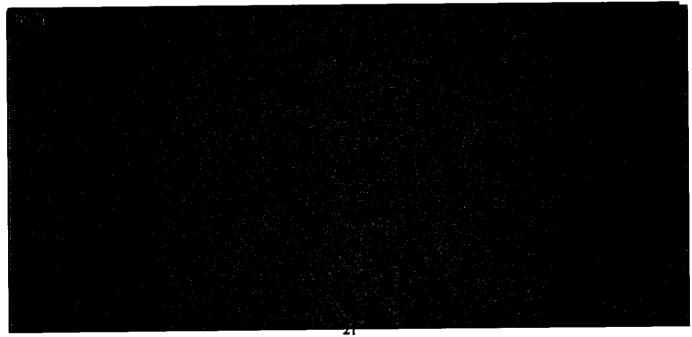
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# 5. (U) Risks



6. (U) Mitigation



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## 7. (U) Way ahead

- a. (U) USSTRATCOM and NORAD are working with the ITW/AA system force provider and DoD leadership to resolve Strategic MW mission risks in accordance with national priorities.
- b. (U) USSTRATCOM is developing longer-term architectural solutions to meet ITW/AA requirements.