

NDU Board of Visitors Information Technology Division Overview



Neil Rahaman
Chief Information Officer
21 May 2019

*Imagine, Create, and
Secure a Stronger Peace...*



NATIONAL DEFENSE
UNIVERSITY
Washington, D.C.



Information Technology Division (ITD) At-a-Glance



History and Challenges

- Expired Authority to Operate (ATO)
- Service Contract Protest
- Insufficient Funding Profile
- Workforce Attrition – Lost the entire Cyber Team
- Inconsistent measurement standards
- DoD IT Reform (4th Estate Optimization)

Success Stories

- ✓ ATO -- 8/2019 (.mil vs .edu)
 - ✓ Improved Authorizing Official relationship
 - Reassessment In-brief 24 May 19
 - On-site 1-12 July 2019
 - ✓ Working towards becoming a .edu vs .mil
- ✓ New Service Contractor (< 6 Months)
- ✓ Fully funded baseline across the FYDP (~\$78M)
- ✓ Using metrics to measure effectiveness
- ✓ 1 of 4 co-chairs of the .edu Consortium

Current Focal Areas

- Reduce security profile
 - Modernization and Standardization of IT Infrastructure, Configurations and IT Baseline
- Execution based on holistic view (Prioritized Integrated Master Schedule) aligned to the NDU & IT Strategic Plans
- Process Improvement (People, Process and Technology)
 - Systematic and Transparent Data Driven Decisions
 - Identify areas for automation

Goals

- Make IT Flexible & Agile
- Enhance the User Experience
 - Navigable & Appropriately Accessible
- Gain Efficiencies in Execution

DoD IT Reform - .edu Consolidation



4th Estate (4E) Recap

- The consolidation, known as the Fourth Estate Network Optimization effort, was directed by the DOD chief information officer and acting chief management officer in late 2018.
- Aims to reduce the cyber-attack surface, reduce operating costs, and improve support services for end users.
- NDU – Exempted from 4E Consolidation

Actions

- Hosted DoD .edu Optimization Working Group (2/19).
- Active involvement with DoD CIO Staff
- Selected as 1 of 4 co-chairs to the DoD Academic IT Consortium (with DoD Education Activity, US Military Academy West Point & Marshall Center)

Focal Areas of Consideration

- Standardized Security Framework
- Identify Commoditized IT Resources
- Maintain Individual Institution's Autonomy
 - Protecting the individual's ability to make decisions

Desired Outcomes

- Executive Agent to offer, but not dictate, solutions to DoD academic institutions
- Identify efficiencies in the form of savings and reduced duplication
- Fit for Purpose Security Standard for DoD .edu institutions

Data Driven Analytics

Cybersecurity Status



SECDEF Scorecard

94%	Admin PKI Enforcement
100%	User PKI Enforcement

FISMA Report

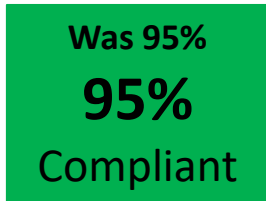
95%	IA Workforce Qualifications
100%	Awareness Training (100% Req)

Threats to NDU

184,239 (35%)	Spam emails blocked	1,394 (.3%)	Virus emails blocked
--------------------------------	---------------------	------------------------------	----------------------

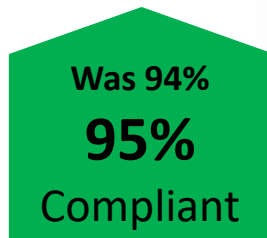
CONTINUOUS MONITORING

WIN10 SHB



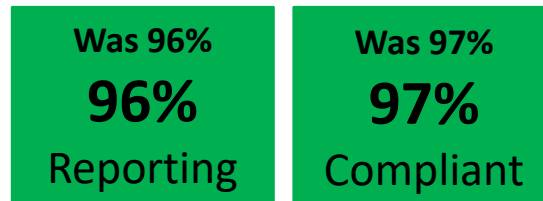
All systems at Win10 SHB

HBSS



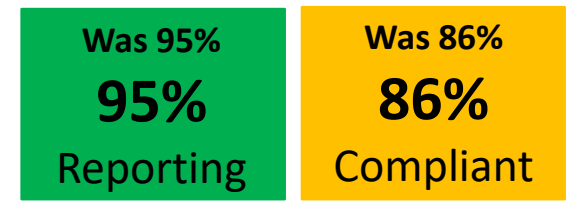
TASKORD 16-0080

CAT 1 OS STIG

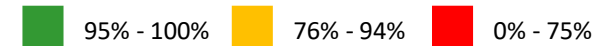


Operating Systems are properly configured

IAVM-A Patches



Operating Systems are properly patched



NDU IT Projects



Project	MSCHE Std.	Requirement
Audio/Video and Classroom Tech	III-IV-V	Transform Student Learning Experience
		Modernize IT Infrastructure
Student Information System	III-IV-V-VI	Impact Student Learning Experience
Non-classified Internet Protocol Router (NIPR), Secret Internet Protocol Router (SIPR) and Joint Worldwide Intelligence Communications System (JWICS)	III-IV-V	Modernize IT Infrastructure
		Impact Student Learning Experience
Experiential Learning – Simulation and Wargaming	III-IV-V	Impact Student Learning Experience
		Experiential Learning
Perpetual Student Engagement	III-IV-V-VI	Impact Student Learning Experience
Hardware	III-IV-V	Modernize IT Infrastructure
Records and Content Management	VI-VII	Enhance University Operations

Modernization

Audio/Video & Classroom Technology



Project	Cost (IGCE)	MSCHE	Status	Comment
<u>AV Modernization (Phase II)</u>	\$ 1,550,000.00	- Std III - Std IV - Std V		<p>Goal: Planned replacement of AV infrastructure.</p> <ul style="list-style-type: none"> • Total: 30 rooms • Scope - (JFSC, McNair - LH, McNair - MH) • ACOE 1144 established (Done 4/23) • Funding has been provided to ACOE (Done 4/30) • Next Step: Estimated contract award date (8/15)
<u>Network Switch Infrastructure (NEIS)</u>	\$ 3,017,665.35	- Std VI		<p>Goal: Planned replacement of networking switching infrastructure</p> <ul style="list-style-type: none"> • Network Analysis Completed (3/22) • Bill of Materials (BOM) Finalized (4/9) • BOM sent to SPAWAR (HHS) to begin contracting actions (4/11) • Develop 1144 and associated documentation (4/22) <p>Next Step: Execute Acquisition (MIPR to HHS) - FY20</p>
<u>Workstation Refresh (JSOMA)</u>	\$ 126,270.50	- Std III - Std IV - Std V		<p>Goal: Lifecycle refresh workstations (JSOMA)</p> <ul style="list-style-type: none"> • Bill of Materials Completed (Done 3/4) • BOM sent to SPAWAR (HHS) to begin contracting actions (Done 3/15) • Planning meeting with SPAWAR rep (re: establishment of IT catalog (Done 4/9) <p>Funding MIPred to HHS for Execution (5/9)</p> <ul style="list-style-type: none"> • Next Steps: Expected shipment delivery (6/15)

Modernization

Student Information System & Calendaring



<p><u>Student Information System</u></p>	<p>\$ 2,000,000.00</p>	<p>- Std III - Std IV - Std V - Std VI</p>		<p>Goal: Selection and implementation of a Student Information System that will serve as an authoritative source of truth for student academic records</p> <ul style="list-style-type: none"> • Over 350 functional requirements have been identified, including 140 SIS-specific requirements • Requirements have been vetted by Academic Affairs, verification with NDU component representatives is (in progress) • A tentative list of SIS candidate systems has been created utilizing Gartner resources (Complete) • Dean Council updates (Ongoing) <p>Key Milestones</p> <ul style="list-style-type: none"> • Requirements review with NPS Python (6/15) • Finalized requirements for the EDMP SIS based on stakeholder recommendations and legacy data store analysis (6/30) • Analysis of Alternatives and Final Recommendation of the SIS solution (7/15) • Projected Goal is to field the SIS in 2020 go-live 2021
<p><u>Academic Calendar Replacement</u></p>	<p>\$ 50,000.00</p>	<p>- Std III - Std IV - Std V - Std VI</p>		<p>Goal: Replacement of the NDU Academic & Scheduling Calendar</p> <ul style="list-style-type: none"> • Work-around developed (Oct 18) • Requirements identified (Nov 18) • Market research (In Progress) • Requirements added to the SIS Requirements Matrix <p>Projected Goal is to field in AY21</p>

Modernization Infrastructure



Project	Cost (IGCE)	MSCHE	Status	Comment
<u>Workstation Refresh (Enterprise)</u>	\$ 3,829,146.12	- Std III - Std IV - Std V		<p>Goal: Lifecycle refresh workstations (NEIS)</p> <ul style="list-style-type: none"> • Initial Planning Session (Done—11/8/18) • Market Research Completed (Done—2/1) • Review of NDU IT Property Custodian Data (~1400—2000 workstations) (Done—2/22) • Planning Meeting w/ Property Custodians (Done 4/3) • Planning meeting with SPAWAR rep (re: establishment of IT catalog (4/9) • Bills of Material Finalized (4/12) • BOMs sent to SPAWAR (HHS) to begin contracting actions (4/16) • Plan Change: Due to the availability of funding; partial execution in FY19 & remaining in FY20Q1
<u>Server & Storage Refresh</u>	\$ 1,500,000.00	- Std VI		<p>Goal: Upgrade & modernization of enterprise compute and storage capabilities</p> <ul style="list-style-type: none"> • Initial Planning Session (11/23/18) • Planning Session Reboot (3/13) • Deployed data collection tools (3/29) • Data collection completed (4/26) • Data Analysis begin (4/1) • Next Step: Review Upgrade COAs (5/23)
<u>AV Modernization (Phase III - FY20)</u>	Cost TBD	- Std III - Std IV - Std V		<p>Goal: Planned replacement of AV infrastructure (Phase III)</p> <ul style="list-style-type: none"> • Scope: Auditorium & conference spaces • Space Surveys (JFSC & McNair) (4/5) • Requirements analysis and refinement (In progress) <p>Next Step: Receive planning BOM - (5/22)</p>

Modernization Experiential Learning



Project	Cost (IGCE)	MSCHE	Status	Comment
JWICS Infrastructure Upgrades (Incl VTC) / per room cost	\$ 150,000.00	- Std III - Std IV - Std V		<p>Goal: Lifecycle refresh of JWICS spaces to modernize & expand to meet business and academic requirements</p> <ul style="list-style-type: none"> • Requirement and data gathering (Done—2/15) • Site Surveys—McNair (Done—3/15) • Rec'd initial ROM per location (Done—4/1) • Next step: Coordination meeting with DIA Chair and NDU Security Director to establish timeline(TBD) <p>Execute in FY 20</p>
DOD Cyber Security Range	\$ 50,000.00	- Std III - Std IV - Std V		<p>Goal: Utilization of the capabilities provided by the DOD Security Range as a tool for experiential learning</p> <ul style="list-style-type: none"> • Cyber range visit and demo (Done—3/11) o Requirements Planning Meeting (Done—4/25) <p>Next Steps</p> <ul style="list-style-type: none"> o Complete NDU stakeholder requirements (6/15) o Establish agreements with the cyber range by end of (8/1)
Joint Information Operations Range (JIOR)	\$ -	- Std III - Std IV - Std V		<p>Goal: Utilization of the capabilities provided by the JIOR as a tool for experiential learning</p> <ul style="list-style-type: none"> • Planned activities <ul style="list-style-type: none"> o Requirements Planning Meeting (6/15) o Obtain NDU stakeholder requirements (8/1)



BACKUP

Vision – Mission – Philosophy – Strategy



Vision

To be a responsive, agile provider of all aspects of technology needed to meet the NDU mission.



Mission

To efficiently drive technologies that advance the educational mission, providing an assured environment to students, faculty and staff, with access to the right information, in the correct form, at the right time.



Philosophy

One Team * One Win

NDU Strategy

- Advance Modeling and Simulation
- Integrate geospatial information science and data
- Research and development tools and methods
- Emerging Technologies that contribute to decision support and analysis
- Technology in classroom for enhancing research

ITD Strategy

- Ensure Operational Excellence in Service Delivery
- Mature the Enterprise Architecture -- Agile and Secure
- Identify and Realize Efficiencies – Process, People & Technology

ITD Organizational Functions



ITD Departments		Affects Compliance with MSCHE Standard:
Strategic Programs and Resources Division (SPRD)	Maps the overall direction for IT and develops the actions necessary to achieve them. Manages contracts, budget and ensures new technologies are resourced correctly.	Standard VI - Planning, Resources, and Institutional Improvement
Technology & Project Management Division (PMO)	Directs and oversees the Program Management Office to ensure IT programs and projects meet organization goals and requirements. Develops and implements processes and policies, directs project management staff, and works with other department leaders to define, prioritize, and develop projects and programs.	Standard III - Design and Delivery of the Student Learning Experience Standard V - Educational Effectiveness Standard VI - Planning, Resources, and Institutional Improvement
Academic Technology (ATO)	Responsible for providing vision, strategy, leadership and management of interactive and learning technologies.	Standard IV - Support of the Student Experience
Operations (OPS)	Responsible for delivering information technology services and keeping equipment and services running. Develops processes for problem management and resolution that can return services to normal without delay. Tracks, investigates and resolves problems or operational changes while meeting the Customer's business needs.	Standard III - Design and Delivery of the Student Learning Experience Standard IV - Support of the Student Experience Standard V - Educational Effectiveness
Cybersecurity (CYBER)	Responsible for the protection of all NDU systems, including hardware, software and data. Ensures the University maintains the appropriate security controls to balance the security principles – Confidentiality, Integrity and Availability of information resources.	Standard VII - Governance, Leadership and Administration

Acronyms



- CAT 1 OS STIG – Category 1 Operating System Secure Technical Implementation Guide
- HBSS – Host Based System Security
- FISMA – Federal Information Security Management Act
- IA – Information Assurance
- IAVM – Information Assurance Vulnerability Management – Type A
- PKI – Public Key Infrastructure
- TASKORD – Tasking Order
- Win10 SHB – Windows 10 Secure Host Baseline Image (Workstation)