Optimizing Cyber Protection Team (CPT) Operations: An Analysis of Task Synchronization and Process Agility in Defensive Cyber Operations

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Abstract: The operations process for Cyber Protection Teams (CPTs) outlined in the U.S. Cyber Command's (USCYBERCOM) Cyber Warfare Publication (CWP) 3-33.4*, Cyber Protection Team Organization, Functions, And Employment*, is currently hindered by inefficiencies stemming from a lack of synchronization between task assignment and execution. This disjointed approach results in a rigid, linear project lifecycle that fails to adapt to the dynamic tempo and increasing sophistication of adversarial cyber operations. Consequently, critical dependencies are missed, milestones are misaligned, and delays in the execution of defensive cyber operations (DCO) occur, ultimately impeding the CPT's ability to meet the strategic intent of USCYBERCOM, which emphasizes agility, creativity, and rapid deployment. This study critically examines the existing CPT operations process with the goal of identifying the optimal timeline for executing DCO missions while highlighting key inefficiencies that hinder operational effectiveness. By deconstructing the process into discrete work packages and analyzing task dependencies through Gantt chart modeling, the critical path is identified, and a best-case scenario is simulated. Even under ideal conditions, however, the process remains excessively rigid, resulting in prolonged timelines that undermine mission success. To address these shortcomings, this research advocates for the integration of agile project management methodologies into the CPT operations framework. By promoting flexibility, real-time feedback loops, and dynamic task sequencing, this approach would enhance the synchronization between planning and execution phases, enabling timelier and more effective DCO. The findings offer a pathway toward aligning the CPT operations process with USCYBERCOM's vision of a more adaptive and responsive force capable of meeting the demands of the modern cyber threat landscape.

Keywords: Cyber protection team (CPT), Defensive cyber operations (DCO), Task synchronization, Agile methodologies, Process optimization

1. Introduction

The current operations process for USCYBERCOM's CWP 3-33.4 *Cyber Protection Team (CPT) Organization, Functions, and Employment* is undermined by the lack of synchronization between task assignment and task execution. The problem is the current operations process is characterized by lengthy timelines and too many work-packages, mostly due to the assumed linear sequencing and missing feedback. This type of approach gives rise to missing logical sequences, incomplete deliverable structure charts and misaligned work breakdown structure control points. This is a problem because the process model becomes a linear model resulting in missing dependencies and mismatching project lifecycle phases with milestones that can entail a schedule baseline that can give rise to delaying implementation and execution. This hinders timely and effective deployment of CPT's desired outcome of defensive cyber operations (DCO). Even in the best-case scenario, which is mostly unattainable, CPT's operations process typically takes longer than mission requirements which is not the intent of USCYBERCOM (United States Cyber Command [USCC], 2020). This rigidity in the proposed planning process impedes the agility and creativity necessary for CPT's to accomplish their mission.

This paper aims to address the problem by providing data and comprehensive analysis on the current framework for DCO, specifically by modeling and analyzing the best-case scenario.

The best-case scenario stands out by showing the inefficacy of the current process outlined in CWP 3-33.4. To achieve a best-case scenario simulation, the authors make several assumptions: one hundred percent resource availability, task durations are based on its most optimistic time to complete, zero synchronization delays between defensive cyberspace force (DCF) leaders, seamless transition between framework subprocesses, and the first-time completion of tasks. At one hundred percent resource availability, all personnel are readily available and are not being overworked, thus all necessary cyber systems are operational and manned. The most optimistic time to complete a task is regarded as the minimum realistic time to typically complete a task, which in this case is one or two days. Zero synchronization delays entail no lack of communication, no misallocation of resources and responsibility, and no work-packages need to be edited or redone. These assumptions are critical

to showing how ineffective the current process is even at perfect operational capacity. By using the most ideal inputs, the poor output produced by the CWP 3-33.4 CPT operations process is ever more apparent.

This paper uniquely addresses the critical gap in the current framework by converting the current operations process into a Gantt chart, then adding the optimal work-package durations to yield the total time from the first phase to the final phase. This offers invaluable insight for DCF leaders to rework chokepoints and hidden dependencies. This contribution encourages military and industry professionals to incorporate clearer and more agile task organization and synchronization. The authors' goal is to emphasize the need for a timelier deployment of CPTs, ensuring that DCO can be executed reliably, swiftly, and at scale within USCYBERCOM.

The research discussed in this paper is significant because it accentuates the dire need for the revitalization of essential cyber systems. Unaltered, the current process will leave the United States vulnerable and outpaced by its adversaries. According to the article titled "The Navy is not Ready for 2026" by Vice Admiral T.J. White, Rear Admiral Danelle Barrett, and Commander Jake Bebber (2024) there is a significant gap between the U.S. Navy's current cyber capabilities and implementations and where they need to be to pace with our adversary, China. The urgent need for change and improvement was highlighted by the two possible outcomes if the Navy remains stagnant: bad and very bad. Admiral White's discussion of the outdated nature of Naval Information Forces along with Navy Information Operations NWP 3-13 (Office of the Chief of Naval Operations [OPNAV], 2014), published in 2014, underscores the necessity for a fresh perspective on how cyber operations are conducted. The current CPT framework, as outlined in CWP 3-33.4 (USCC, 2020), hinders cyber and information forces capabilities to perform DCO efficiently and effectively. This paper highlights the hidden dependencies and bottlenecks in the current process with the hope of inspiring the modernization of the CPT operations process. Within a broader context, the authors desire to not only put the spotlight on the CPT operations process but on all current cyber processes that have not been modernized to stay on pace with malicious cyberspace activities (MCA).

This research intends to use quantitative data collected from a best-case scenario completion of the current CPT operations process to draw attention to excessive coordination between organizations and hidden dependencies within the process caused by the present framework organization.

2. Background

A significant portion of modern warfare is cyberwarfare. In addition to the cyber domain being its own area of contention, this domain is vital to the interconnection of the Department of Defense (DOD) assets as well as the combat capability of the Joint Force. The interconnectivity of warfare domains requires an elevated cybersecurity posture because of the integration of cyber capabilities with DOD assets. Proper maintenance and development of cyberspace capabilities is essential to ensure "the superiority of the Joint Force, strengthening our ability to coordinate and quickly adapt to dynamic circumstances." (Department of Defense [DOD], 2023). Among USCYBERCOM's many capabilities, its CPT's are critically important to DCO and challenging cyber threats who seek to undermine our military's operability in all domains of warfare.

Defensive cyberspace operations, by definition, are "passive and active cyberspace operations intended to preserve the ability to utilize friendly cyberspace capabilities and protect data, networks, net-centric capabilities, and other designated systems" (Committee on National Security Systems [CNSS], 2022). DCO is essential to mitigating risk from cyber dependencies to ensure operational commanders can effectively combat the adversary to the strength of its physical limitations (Wleklinski, 2024). Currently, USCYBERCOM faces challenges with vulnerabilities and exploits, network security, monitoring, permeability and agility across domains, and infrastructure and transport (United States Cyber Command [USCC]). These are all areas for defensive cyber forces to be created or allocated to defend against the persistent attacks of malicious cyber actors (DOD, 2023).

Cyber protection teams are dynamic, deployable tactical units that are organized, trained, and equipped to target specified cyber threats and MCA. CPTs serve as a detachment force to mission partners, with their core functions being to execute hunt and clear operations, enable hardening, and assess networks and security. Depending upon the mission, partners range from Department of Defense Information Network (DODIN) to network-owning commanders, local network protectors, cybersecurity service providers (CSSPs), and others in the area of operations (USCC, 2020). CPTs are trained and employed according to specified missions with indefinite timelines. Doctrinally, CPTs are intelligence-driven DCO units that are maneuvered to respond to imminent or ongoing threats. CPT's are intended to rapidly target MCA, protect assets, and support organizations' networks; these organizations include "National, DOD, USCYBERCOM, CCMD, Joint Force Headquarters – Department of Defense Information Networks (JFHQ-DODIN) or SCC" (USCC, 2020).

As stated, the authors believe that the current process from trigger to employment is ineffectively long and possess synchronization issues. The current process requires alignment in intent, communication, and responsibilities between a multitude of organizations. This stringent cooperation among many entities leads to stalls in procedures, halts in development, and breakdowns in responsibility, leading to the slow employment of CPTs. The reality is the long duration from trigger to employment renders friendly networks and assets exposed to MCA tactics, techniques, and procedures (TTP) for longer than intended by the CWP 3-33.4. To understand the errors, we must look at the current operations process framework.

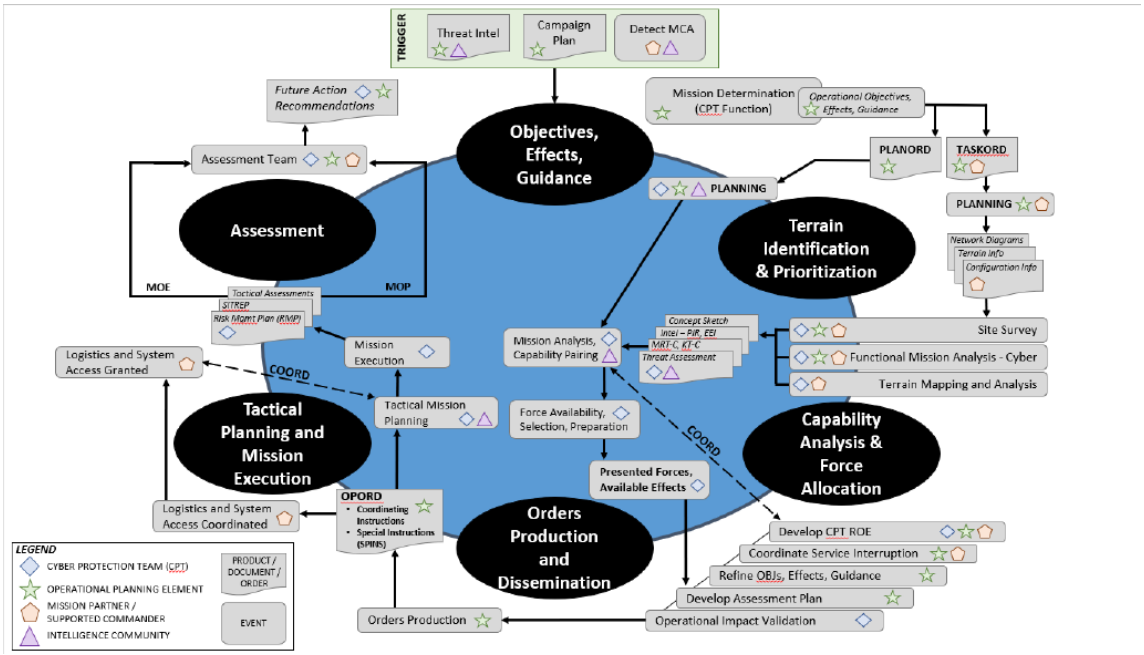

Figure 1: CPT Operations Process (Graphic is unclassified). CWP3-33.4 (USCC, 2020, January 28)

The process is broken down into six main steps which are further broken down into work-packages that are required to be completed sequentially. All steps and definitions are derived from CWP 3-33.4 (USCC, 2020). The first step of the CPT operations process is *Objectives, Effects, Guidance* which starts when there is a condition that triggers a mission. The three main components that can trigger the need for a CPT mission are threat intelligence, a campaign plan, and the detection of MCA. This section identifies the necessary CPT functions and then begins outlining objectives and commander's guidance. The first step needs to be completed as a way to establish the operational planning section, initiate the mission planning and ensure working command relationships between the operational section and the supported commander as well as making any recommendations to the appropriate commander to facilitate the completion of the mission.

The second step of the CPT operations process is *Terrain Identification and Prioritization*. In this step, the scope of the mission is defined as well as an analysis of the resources available to the supported organization. A proper mission analysis (MA) is necessary to ensure the future successful execution of the CPT mission. MA is a way for DCF leaders to gain an understanding of the supported organization and to identify which layers of their cyberspace are mission critical. MA is further broken down into three additional work-packages: Site Survey, Terrain Mapping and Analysis, and Adversary Analysis. These work-packages are essential to provide the CPT with a proper knowledge of the operational information environment (OIE) and high-level network visualization.

The third step of the CPT operations process is *Capability Analysis & Force Allocation*. This step is crucially dependent on operational planning as well as the MA conducted in previous steps. Using the outputs of the previous steps, the CPT constructs a tactical mission plan and coordinates with respective supported commander's staff to define the appropriate tactical scope of the mission. Once that is established, it enables them to allocate appropriate resources to ensure mission success. This step is broken down into many different work-packages that overlap between the different CPT categories, requiring significant coordination for expedited accomplishment.

The fourth step of the CPT operations process is *Orders Production and Dissemination*. In this step, all the work that has been achieved in the previous steps gets routed to the operational level orders production team to produce and publish finalized orders to guide and assist CPTs.

The fifth step of the CPT operations process is *Tactical Planning and Mission Execution*. In this step of the process, a lot of the responsibilities shift from the operational planning section to the CPT. The CPT creates their own tactical mission plan based on the guidance provided in the previous step. Once the tactical mission plan is completed, the CPT gains access to the supported organizations terrain in cyberspace. The CPT is then able to execute the mission while still abiding by the procedures given to them by the operational-level planning element. Depending on what tasking is provided, the CPT will be expected to produce deliverables throughout and post mission execution.

The final step of the CPT operations process is *Assessment*. In this step, the operational planning section analyzes the execution outputs produced in the previous step to determine whether the mission objectives and desired effects were attained. It allows the operational planning section to make any recommendations for more effective CPT employment in the future.

The CPT operations process as outlined and defined in CWP 3-33.4 is designed in a linear, waterfall model. Each step must be successfully completed for the process to progress to the following step. The linearity of the design allows for the identification of a critical path which is crucial for proper resource allocation and mission completion. With the critical path identified, essential "high-risk" tasks and bottlenecks can be detected and mitigated. The process outlines all the steps needed for successful process completion from the trigger to assessment, however, the linearity of the process results in rigidity which is detrimental in complex projects. Another complexity highlighted by the authors is that the process does not properly account for the natural way humans plan and operate. The misalignment of natural work styles with the required work process leads to reliance on the willpower and work ethic of cyber professionals involved, which is not a scalable resource (Wleklinski, 2024).

The authors intend to quantitatively emphasize the deficiencies in the current traditional, linear design of the CPT operations process and recommend a shift to a more modern, agile design. As explained by Adelakun and Iyamu (2021), a majority of Silicon Valley companies have shifted from using a traditional waterfall approach to project management to the more dynamic, agile approach. The key benefits to using the agile method that the article highlights are "flexibility to make changes to project requirements, less documentation, [and] earlier defect detection" (Adelakun and Iyamu, 2021). The agile methodology allows for a more fluid transition through the steps of a process, enabling CPTs to better operate in the dynamic cyber domain. Similarly, Sinha and Das (2021) explain the versatility of an agile methodology which is essential in any industry that is constantly evolving. Implementation of agile methodology allows for fast, flexible, and dynamic operations, creating an appealing solution to the current cyber threat model.

3. Methodology

To comprehend the scope of each phase and the breadth of work-packages needed for the successful employment of CPTs, the authors created the "WBS". The WBS is a spreadsheet representation of the CPT operations process framework that displays all the work-packages, subtasks, milestones, and deliverables for the USCC CPT operations process. The authors intend to expose the total amount of tasks and hidden subtasks that are implied by the process but are not explicitly outlined in CWP 3-33.4.

To understand the synchronization amongst organizations for the creation, function, and employment of CPTs, the authors created the "Project Deliverables Matrix". The Matrix is a spreadsheet representation of the CPT operations process framework that foregrounds the deliverables for each of the six phases and the corresponding organizations responsible for each deliverable.

To analyze the linearity of the framework, interphase dependencies, and processes duration for CPTs employment, the authors created the "CPT Lifecycle Timeline". The Timeline is a Microsoft Project Gantt Chart that implements the CPT operations process in an accurate, well integrated, and linear model of the current process as seen in Figure 1.

Before delving into the utility of the "WBS", "Project Deliverables Matrix" and the "CPT Lifecycle Timeline" presented by the authors, it is essential to first grasp their frameworks. The upcoming sections offer a guide on how to interpret WBS, The Matrix, and The Timeline, in conjunction with their accompanying attachments.

3.1 WBS

To construct the WBS spreadsheet, the authors sifted through the CWP 3-33.4 and the explanations of the individual steps of the CPT operations process (Figure 1). To initiate the breakdown, the steps and work-packages visible in Figure 1 were organized in sequential order. After delving into the explanations and definitions,

additional subtasks were identified as mission critical to the CPT operation process. The newly identified subtasks were then added into the linear sequencing of tasks based on where and when they needed to be accomplished.

The WBS dissects the already complex CPT operations process into every subtask that needs to be completed, unveiling the waterfall methodology. Broken down from the high-level steps of the process to the low-level subtasks, the WBS depicts the sheer amount of work that needs to be completed as well as the hidden dependencies that come from unacknowledged subtasks. Once all steps, work-packages, and subtasks were identified and organized, the WBS outlined 126 individual tasks that need to be linearly completed to execute the CPT operations process from trigger to completion.

The WBS also highlights any step throughout the process that is needed to produce a deliverable. The highlighted steps were then transferred to The Matrix for further analysis.

3.2 The Matrix

The Matrix presents the deliverables of each phase of the CPT operations process corresponding to each organization that is responsible for the successful completion of that deliverable.

The Matrix includes three columns:

- Phase: This column includes the title of the six project lifecycle phases. Under each phase, the codified title of the phased deliverables are noted. The deliverable is noted by DX.Y where X is the parent phase and Y is the non-repeated number of that deliverable. For example, in *Phase 2: Terrain Identification & Prioritization*, deliverable 4 is denoted D2.4.
- Deliverable: This column corresponds each deliverable's common name to its code name in the Phase Column. Each deliverable's common name is adjacent to its code name in the same row. Building off the previous example, the common name for D2.4 is *Threat Assessment* in the Deliverable Column.
- Formation: This section includes the four organizations accountable for all phases and deliverables. There are four sub columns, one for each organization: CPT, OPCON HQ OPS Section, Mission Partner/Supported Command, and Intelligence Community. Under each column, for each phase and for each deliverable, the organization can be labeled with an 'A', an 'S', or blank. The legend describes the two codes: 'A' and 'S'. Any organization denoted with 'A' in the formation column is ultimately accountable and responsible for the phase or deliverable on its row. Any organization denoted with an 'S' in the formation column is necessary to support and synchronize with the accountable organization to produce the deliverable. There is only one entity that is ultimately responsible for each phase and for each deliverable. There can be multiple supporting entities per phase and deliverable. Not every entity is involved with every phase.

The authors make note of key deliverables; these are deliverables of each phase that shall be produced in order to proceed to the next phase. Doctrinally, there are 23 deliverables, amongst the six phases in the life cycle. However, the authors identified 8 as necessary for proper completion of the project lifecycle.

This Matrix achieves two outcomes: showing which deliverables are essential to mission employment and calling attention to the large number of players required to coordinate for each deliverable.

3.3 The Timeline

The Timeline integrates the tasks outlined in WBS into a project timeline with durations assigned to each phase and subtask. It also draws from the Project Deliverables Matrix to establish which organization is accountable for what phase (ie, CPT, OPCON HQ OPS Section, Mission Partner/Supported Command, and Intelligence Community). The Timeline contains a Gantt Chart in addition to the project timeline, visually displaying the start and end of each task, phase, and process of the critical path.

The Project Timeline displays in chronological order the tasks within the CPT operations process. The columns of the timeline are task name, duration, predecessors, resource names, WBS, start, and finish. The breakdown is as follows:

- Task Name: This column is a nested list of sequential events in the CPT operations process. The outermost task is labeled 'DCO', which encapsulates each phase and each corresponding subtask.
- Duration: The timeline is measured in days. Each task has a variably set duration. Each phase's duration is the sum of its task lengths. The overall process is the summation of the time, in days, of each phase. The total duration can be found at the outermost task, labeled 'DCO.'

- Predecessors: This column may include the row number corresponding to the task name of prerequisite tasks to be completed before the current task can be started. Some predecessor rows 'X' are denoted as 'XFF' or 'XSS'. The 'FF' stands for "finish-to-finish" meaning the current task finishes at the same time as the predecessor task. The 'SS' stands for "start-to-start" which means the current task starts at the same time as the predecessor task.
- Resource Names: This column includes the organizations that are accountable for or supporting the given task/WBS. The specified resource may include the organization, unit, or operational commander.
- WBS: The WBS column aligns the task numbers with the previously identified subtasks. The first number represents the phase (X), the second number represents the work-packages (X.X), and any further number (X.X.X and beyond) represents the hidden subtasks that were identified in CWP 3-33.4.
- Start: This is the start date of the task, phase, or process.
- Finish: This is the completion date of the task, phase, or process.

The Gantt Chart displays this project timeline in a box chart. The horizontal axis is the timeline in days from the start date to the end date of the process. Each box aligns with a task on the vertical axis. This visual representation shows the chronological order of tasks, displaying the interdependencies and prerequisites. Following the tail of one box to the head of another reveals loops and other inefficiencies in the critical path.

To assign duration values to each subtask, the authors had to make best-case scenario assumptions: one hundred percent resource availability, zero synchronization conflict between DCF leaders and responsible commands, and timely completion of framework subprocesses. These assumptions signify that all work personnel are available and complete the task as soon as they receive it. The different responsible organizations are able to coordinate successfully to ensure efficient resource allocation and no delays due to paperwork, for example. Finally, the simulated best-case scenario assumes each task is completed in the ideal time frame, keeping the rest of the process on pace. All this leads the authors to input ideal time durations for each task; the ideal times used were low duration values of 1 or 2 days.

4. Findings and Analysis

The combination of the Gantt Chart and the project timeline provides a visual representation of the complete CPT operations process from the trigger to the completion of the mission. With the ideal time durations assigned to the subtasks in the methodology section, the calculated best-case scenario was 28 days. Even in the most ideal of situations, this completion time of 28 days is not satisfactory for a CPT mission in the dynamic cyber domain of today. It is too slow for the current pace of MCA.

In addition, the 28-day estimate, though derived from an ideal scenario, is further impacted by inefficiencies in human resources and task dependencies in the real world. In other words, the actual duration of the process will take significantly longer than 28 days.

With regards to human resources, there is the assumption that the commanders, subordinates, and professionals are all working at one-hundred percent capacity. This means deadlines are met and deliverables are accurate, with no need to repeat any part of any phase. The issue with this is the human factor. Pragmatically, situations will arise in the day-to-day operations that may prohibit a professional from completing work on a given day, delaying the accomplishment of a task. For example, commanders being stuck and unable to agree on a budget for an operation, workers absent due to illness, and bad deliverables due to misunderstanding a commander's intent, are among the plethora of common issues that arise in everyday operations.

With regard to task dependencies, the project timeline uses the predecessor column to highlight conflicts caused by the linearity of the waterfall design process. In the best-case scenario used, tasks are being completed on schedule, meaning the CPTs are not experiencing delays due to the dependencies. However, pragmatically, if one task actually requires four days of work instead of the projected one, the completion of the entire process gets delayed. This situation, although bad, is realistic. Now, once the issue scales to the 126 individual tasks identified in the WBS, the time to completion grows exponentially.

After analyzing the resulting duration and process structure, the authors suggest potential solutions that appear evident. To shorten the duration time, one solution lies in the amount of deliverables required to be produced. As was observed in The Matrix, the process produced 23 deliverables, however, only 8 of them were identified as being key. By focusing solely on the deliverables that have been identified as essential, the workload would

be significantly reduced resulting in a shorter duration time. A second solution lies in the workflow design of the process. The WBS and The Timeline identified 126 sub processes necessary for the completion of the CPT operations process. These portray the lengthy, and linear nature of the current process which calls attention to the ineffectiveness of a traditional waterfall model design. More modern companies are transitioning to an agile methodology due to the constantly evolving cyber domain (Adelakun and Iyamu. 2021), (Sinha and Das, 2021). By implementing an agile methodology, it would allow for a more fluid progression through the process that is more natural to the way humans recursively plan and execute. Both Henry Ford's agile management system and Taiichi Ohno's Toyota production system were developed with this approach in mind. Their innovative, systematic methods to task interdependencies and bottleneck resolution revolutionized industrial practices worldwide. They provided a scalable and repeatable process for when time is limited and resources are constrained (Wleklinski, 2024). Moreover, this process, being a DCO, will help increase throughput via insurance with this systematic, scalable, and disciplined approach. CPTs are assigned various types of missions in different environments with disparate resources, making it essential to model the CPT process on an industry-standard approach that is proven to accommodate a wide range of operations.

5. Conclusion

In conclusion, the operations process for CPTs outlined in the U.S. Cyber Command's (USCYBERCOM) Cyber Warfare Publication (CWP) 3-33.4*, Cyber Protection Team Organization, Functions, And Employment*, is currently hindered by long process duration and inefficiencies from a lack of synchronization between task assignment and execution. The duration from trigger to employment of CPTs is inadequate for the rapid pace of MCA. This is important because DCOs must be implemented effectively to combat cyber threats and serve friendly assets.

After organizing the CPT operations process and all the hidden subtasks in the Appendices, the authors were able to calculate an estimated completion time based on best-case assumptions. Even under the most ideal conditions, the process took 28 days to complete, which underlines the lengthy timelines caused by the dependencies and required synchronization. To shorten the duration of the process, the authors conclude that the CWP 3-33.4 CPT operations process must be redesigned to be more agile or truncated to include only the essential tasks and required deliverables. It is crucial to remember that in the real world, processes often take longer due to the human factor, so the framework needs to be robust and concise as a baseline.

Future research could explore a method of modeling and simulation to establish an 'average' case scenario opposed to the best-case scenario which was used in this research. By applying various task durations through a Monte Carlo simulation, duration discrepancies can be simulated to reflect real-world conditions, resulting in a more realistic completion time. As discussed in Findings and Analysis, a more agile framework needs to be developed to reduce bottlenecks in the critical path. Future research could see the development and testing of a more agile framework to provide a more scalable and versatile solution. Furthermore, instead of simulating theoretical scenarios, future research could analyze past CPT missions' trigger-to-employment duration and compare it with durations proposed from newly designed agile frameworks. Lastly, researchers could investigate how strictly teams followed the current CPT process and, if they strayed from the linear model, determine the natural process they used and utilize it to make a natural framework that is a more instinctive approach to mission development.

References

Adelakun, O., & Iyamu, T. (2021). Translation of Activities in a Global Virtual Teams Software Development: Agile vs. Waterfall. *Journal of Cases on Information Technology*, *23*(4), 1–18. https://doi.org/10.4018/JCIT.20211001.oa11

Committee on National Security Systems. (2022, March 2). Committee on National Security Systems (CNSS) Glossary. CNSSI 4009. https://www.cnss.gov/CNSS/openDoc.cfm?a=FnP0sAjCVMQYkZfl5njmlw%3D%3D&b=E0B2E26A9D380E7FF6BAE1ACF9AB97F68280F15368E00D2D4506972E6331EFC317F0C664C83697A3AA42F0451781CC51

Department of Defense. (2023). *Summary, 2023 Cyber Strategy of The Department of Defense.* https://media.defense.gov/2023/Sep/12/2003299076/-1/-1/1/2023_DOD_Cyber_Strategy_Summary.PDF

Office of the Chief of Naval Operations. (2014, February). Navy Information Operations (NWP 3-13). https://cle.nps.edu/access/content/group/0a71747e-4965-431e-8925-fef88bd68817/Topic%201/NWP%203-13%20IO.pdf

Sinha, A., & Das, P. (2021). Agile Methodology Vs. Traditional Waterfall SDLC: A case study on Quality Assurance process in Software Industry. *2021 5th International Conference on Electronics, Materials Engineering & Nano-Technology (IEMENTech)*, 1–4. https://doi.org/10.1109/IEMENTech53263.2021.9614779

United States Cyber Command. (2020, January 28). *Cyber Protection Team (CPT) Organization, Functions, and Employment* (CWP 3-33.4).

United States Cyber Command. *United States Cyber Command, Command Challenge Problems.* https://www.cybercom.mil/Portals/56/Documents/Technical%20Outreach/USCC_CC_Booklet_Final-v2.pdf

Wleklinski Jr., F. (2024, March 30). *A Systemic Approach to Cyber Operations: Making the Navy ready for the Information War of 2026.*

White, T. J., Barrett, D., & Bebber, J. (2024, January 31). *The Navy is not ready for the Information War of 2026*. U.S. Naval Institute. https://www.usni.org/magazines/proceedings/2024/february/navy-not-ready-information-war-2026