



~~(S//REL)~~ **USCYBERCOM 30-Day Assessment of Operation GLOWING SYMPHONY: Executive Summary**

~~(TS//SI//REL TO USA, FVEY/FISA)~~ Operation GLOWING SYMPHONY (OGS) is a United States Cyber Command (USCYBERCOM) operation targeting the Islamic State in Iraq and the Levant (ISIL) [REDACTED]

[REDACTED]

~~(TS//SI//REL TO USA, FVEY)~~ Through Operation GLOWING SYMPHONY, USCYBERCOM sought to contest ISIL's ability to execute its media and [REDACTED] contest the enemy in the information domain, and [REDACTED].

~~(TS//SI//REL TO USA, FVEY/FISA)~~ USCYBERCOM designed OGS to [REDACTED]

[REDACTED]. Key to this operation was close coordination between Joint Task Force (JTF) ARES, USCYBERCOM, the Federal Bureau of Investigation (FBI), the National Security Agency (NSA), and [REDACTED] to maintain pressure on ISIL and to address attempts by ISIL media to reconstitute.

~~(TS//SI//REL TO USA, FVEY)~~ [REDACTED] USCYBERCOM initiated OGS; since the start of the operation, Coalition forces [REDACTED]

[REDACTED]

~~(TS//SI//REL TO USA, FVEY)~~ During the initial mission period, Coalition forces successfully executed the operation according to plan by [REDACTED]

[REDACTED]

[REDACTED]. And, at the request of US Central Command (USCENTCOM), we have successfully executed [REDACTED] in support of their Combatant Command objectives.

~~(TS//SI//REL TO USA, FVEY/FISA)~~ USCYBERCOM assesses that OGS has imposed time and resource costs [REDACTED]

[REDACTED]

~~TOP SECRET//SI//REL TO USA, FVEY//RSA~~

[REDACTED]

(TS//SI//REL TO USA, FVEY) The Intelligence Community (IC) assesses that OGS disrupted ISIL media

[REDACTED]

(TS//SI//REL TO USA, FVEY) Reporting reflects that Coalition operations have temporarily caused ISIL to

[REDACTED]

[REDACTED]. Overall, USCYBERCOM assesses that OGS successfully contested ISIL in the information domain [REDACTED]

[REDACTED]

(TS//REL TO USA, FVEY) Operation GLOWING SYMPHONY is the most complex offensive cyberspace operation USCYBERCOM has conducted to date. [REDACTED]

[REDACTED]

[REDACTED]. Process establishment and refinements will help USCYBERCOM posture for future policy discussions, such as the policy implications of cyber operations with effects against ISIL [REDACTED].

(S//REL TO USA, FVEY) The scale and complexity of OGS has also allowed us to learn a number of lessons that will benefit the community as we move forward. The main report discusses our lessons learned with respect to [REDACTED]

[REDACTED]

(S//REL TO USA, FVEY) The initial approved strike window for OGS was for 30 days, concluding at [REDACTED]. Based upon the experiences and lessons of OGS, USCYBERCOM will inform and coordinate [REDACTED] for OGS with our Interagency partners, in order to disrupt [REDACTED]

[REDACTED]



~~(S//REL)~~ **USCYBERCOM 30-Day Assessment of Operation GLOWING SYMPHONY**

~~(S//REL TO USA, FVEY)~~ This document represents the United States Cyber Command (USCYBERCOM) assessment of Operation GLOWING SYMPHONY (OGS) after 30 days from initiation of the operation. The assessment is divided into four main sections. The *Operational Overview* section describes the planning and execution of the operation, including an assessment of task accomplishment. The *Operational Effectiveness* section summarizes the USCYBERCOM assessment of the effects of OGS on ISIL, as well as the maturation of United States (US) Government (USG) approval processes for offensive cyberspace operations (OCO). The *Lessons Learned* section describes a selected subset of the lessons learned as a result of OGS. Finally, the *Way Ahead* section describes the USCYBERCOM recommended follow-on actions.

(U) OPERATIONAL OVERVIEW

~~(TS//SI//REL TO USA, FVEY/FISA)~~ OGS is a USCYBERCOM operation targeting the Islamic State in Iraq and the Levant (ISIL) [REDACTED]

[REDACTED]

~~(TS//REL TO USA, FVEY)~~ OGS focused on [REDACTED] ISIL media and propaganda operations. [REDACTED]

[REDACTED]

~~(TS//REL TO USA, FVEY)~~ [REDACTED]

[REDACTED]

~~(S//REL TO USA, FVEY)~~ This section describes the planning and execution of OGS. The planning portion explains the purpose, concept of the operation, and initial expectations. The second portion summarizes the execution of OGS, including Coalition and Interagency efforts.

(U) PLANNING

~~(TS//SI//REL TO USA, FVEY)~~ In accordance with COMUSCYBERCOM's intent, *through Operation GLOWING SYMPHONY, USCYBERCOM sought to contest ISIL's ability to execute its media and*

[REDACTED]
[REDACTED] contest the enemy in the information domain,
and [REDACTED]
[REDACTED].

(TS//SI//REL TO USA, FVEY) Figure 1 graphically depicts the concept of the operation for OGS. The initial phase consisted of [REDACTED]

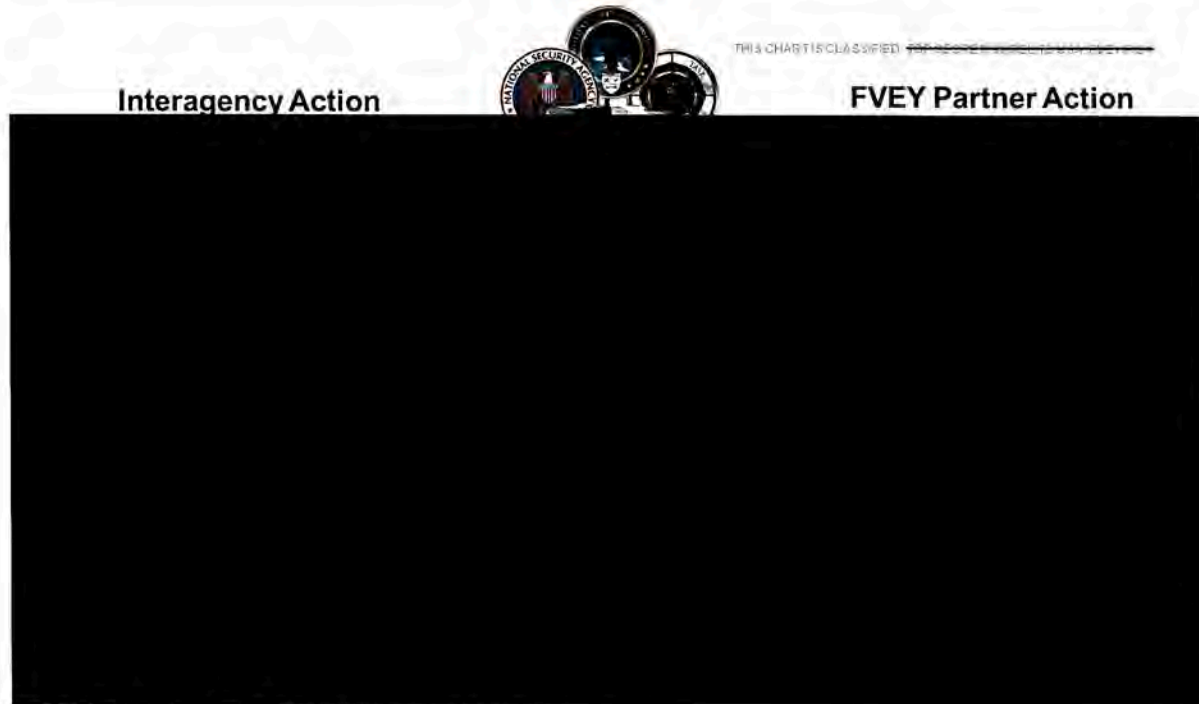
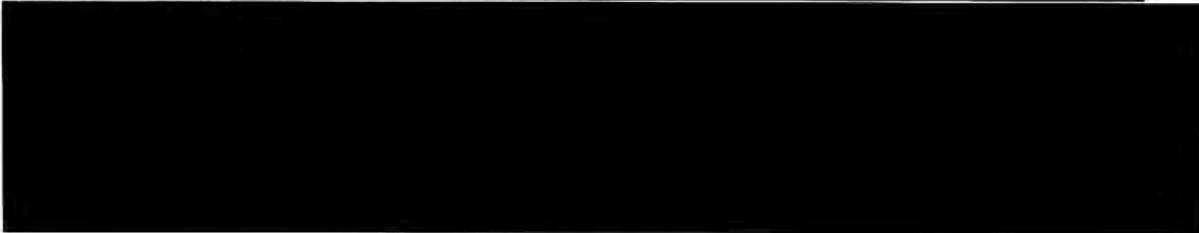


Figure 1. (S//REL TO USA, FVEY) OGS Concept of the Operation.

(TS//SI//REL TO USA, FVEY) [REDACTED]
[REDACTED]

(TS//SI//REL TO USA, FVEY/FISA) USCYBERCOM designed OGS to [REDACTED]
[REDACTED] thereby degrading and disrupting ISIL's ability to disseminate and distribute media and propaganda globally. Key to this operation was close coordination between Joint Task Force (JTF) ARES, USCYBERCOM, the FBI, the

NSA, and [REDACTED]. The techniques used in OGS ensured that the operation would [REDACTED]. Additionally, USCYBERCOM coordinated the operation with Combined Joint Task Force (CJTF) Operation Inherent Resolve (OIR) and United States Central Command (USCENTCOM) to synchronize its execution with offensive operations in Mosul, Iraq.

(TS//REL TO USA, FVEY) Initial expectations were that Coalition operations would significantly impact ISIL media distribution and dissemination [REDACTED] however, planners also recognized that [REDACTED]

[REDACTED]

(U) EXECUTION

(TS//SI//REL TO USA, FVEY) [REDACTED] USCYBERCOM initiated OGS [REDACTED]. Since the start of the operation, we have [REDACTED]

[REDACTED]

(TS//SI//REL TO USA, FVEY) [REDACTED]

[REDACTED]

(TS//SI//REL TO USA, FVEY/FISA) JTF ARES, [REDACTED] operation were well coordinated. In a number of cases, [REDACTED]

[REDACTED]

(TS//SI//REL TO USA, FVEY) OGS continues to [REDACTED]

[REDACTED]

planning with the FBI, [REDACTED]. The FBI is addressing [REDACTED]

[REDACTED]

[REDACTED] after coordination with the Office of the Secretary of Defense for Policy (OSD(P)) and the Joint Staff. The team was able to successfully [REDACTED]

[REDACTED] prior to OGS execution.

(TS//SI//REL TO USA, FVEY) At the request of USCENTCOM, JTF ARES executed [REDACTED]

[REDACTED]

[REDACTED]. Additionally, we are coordinating with USCENTCOM to [REDACTED] in support of ground operations [REDACTED].

(S//REL TO FVEY) With respect to the Coalition's task performance, we assess our task accomplishment in the execution of OGS as successful overall. USCYBERCOM, [REDACTED]

[REDACTED]

[REDACTED] in support of USCENTCOM operations. For further discussion of task accomplishment measures of performance (MOP) and assessment for OGS, see Appendix A.

(U) OPERATIONAL EFFECTIVENESS

(C//REL TO USA, FVEY) This section assesses the effectiveness of OGS in two parts tied to the original purpose of the operation. The first part describes the effects of OGS on ISIL, as reported in intelligence reflections and operational observations. The second part summarizes the maturation of the process for approving OCO.

(TS//REL TO USA, FVEY) The arrangement of cyber capabilities in time, space, task, and purpose is critical to operational success. Therefore, the global actions executed by JTF ARES during OGS were characterized by [REDACTED]

[REDACTED]

(C//REL) IMPACT ON ISIL

(TS//SI//REL TO USA, FVEY) USCYBERCOM assesses that OGS has imposed time and resource costs on [REDACTED]

[REDACTED]. The

operation removed ISIL media [REDACTED]. This infrastructure was used to support propaganda production, distribution, dissemination, and ISIL media

[REDACTED]

The full extent of the impact of OGS on the ISIL media system is difficult to assess comprehensively, due to [REDACTED] performing similar functions for ISIL media.

(TS//SI//REL TO USA, FVEY) The IC assesses that OGS disrupted ISIL media [REDACTED]

[REDACTED]

- (TS//SI//REL TO USA, FVEY) OGS targeted [REDACTED] assessed to be used by ISIL media for [REDACTED].

[REDACTED]

- (TS//SI//REL TO USA, FVEY/FISA) While OGS did target [REDACTED], OGS did not target [REDACTED] [REDACTED] which were not directly targeted by OGS.

- (TS//SI//REL TO USA, FVEY) USCYBERCOM assesses that ISIL media [REDACTED] [REDACTED]

was not targeted in OGS. ISIL continues to [REDACTED]
[REDACTED]

- ~~(TS//SI//REL TO USA, FVEY)~~ While OGS was not intended to target ISIL's [REDACTED] [REDACTED] OGS has had a limited and temporary but publically visible success against [REDACTED]. During OGS, the Coalition was able to target ISIL [REDACTED]
[REDACTED].⁵ However, recent reporting suggests ISIL is [REDACTED]

- ~~(TS//SI//REL TO USA, FVEY)~~ OGS removed ISIL media [REDACTED] [REDACTED] according to USCYBERCOM analysis.⁷ This removal [REDACTED]
[REDACTED] according to signals intelligence.¹²

~~(TS//SI//REL TO USA, FVEY)~~ [REDACTED] within the ISIL media apparatus has [REDACTED]

In addition, USCYBERCOM [REDACTED] during the initial days of OGS [REDACTED] ISIL's media apparatus.

- ~~(TS//SI//REL TO USA, FVEY)~~ ISIL media [REDACTED]
- ~~(TS//SI//REL TO USA, FVEY)~~ USCYBERCOM is also [REDACTED] of additional ISIL media [REDACTED] to enhance future targeting efforts.

~~(TS//SI//REL TO USA, FVEY)~~ In summary, Coalition operations as part of OGS contested ISIL's ability to execute its media [REDACTED] operations by imposing time and resource costs [REDACTED]
[REDACTED]

[REDACTED]. It is clear that OGS has impacted ISIL's [REDACTED]. Reporting reflects that [REDACTED]

Coalition operations have temporarily caused ISIL to [REDACTED] but it is not yet clear whether this will make ISIL media operations [REDACTED]. USCYBERCOM assesses that OGS has successfully contested ISIL in the information domain [REDACTED].

(U) PROCESS MATURATION

(S//REL TO USA, FVEY) Planning and executing OGS—the most complex offensive cyberspace operation USCYBERCOM has conducted to date—provided the opportunity to truly exercise the application of existing authorities and processes. As a result, USCYBERCOM has stimulated the codification and normalization of processes for the approval of OCO, methods which can be effectively applied to future operations.

(TS//SI//REL TO USA, FVEY) [REDACTED] OGS was successful in prosecuting only those target elements approved for action, [REDACTED]. Even at the significant operational scale, Coalition forces were able to execute the mission precisely and discreetly.

(TS//REL TO USA, FVEY) The main strategic risk in the cyber domain is [REDACTED]. The cyber domain is geographically agnostic. [REDACTED] is not necessarily constrained by geographic boundaries. To conduct OCO effectively, cyber forces maneuver through cyber infrastructure that exists globally. For coordination of Interagency equities, USCYBERCOM adheres to the Joint Interagency Coordination process outlined in the [REDACTED].

(TS//REL TO USA, FVEY) [REDACTED] Joint Interagency Coordination process is a fairly mature process, but one that has not been used to synchronize the speed, scope, and scale of operations as executed during OGS. Through OGS, we have taxed the process and begun to mature it. Related to [REDACTED] the existing SecDef elevation policy in the event of an Interagency partner non-concurring with [REDACTED] has been exercised only one time, again during the OGS approval process. The Department of Defense (DoD), USCYBERCOM, and the Interagency developed processes in stride to resolve partner non-concurs. These processes should be evaluated, codified, and tested through future operations before considering further delegation of authority. [REDACTED].

[REDACTED]

(b) (1) Sec. 1.4 (a) (d) (g) , 1.7 (e)

(b) (5)

~~TOP SECRET//SI//REL TO USA, FVEY//CS-1~~

~~(TS//REL TO USA, FVEY)~~ Operational risk is directly correlated with the speed and efficiency with which we can conduct Interagency coordination and execute [REDACTED] Joint Interagency Coordination process. Strong partnership with the Interagency, the IC, and our international teammates mitigates this risk. Furthermore, codification of procedures learned through the execution of operations such as OGS will help to normalize the process, increase efficiency, and decrease operational risk.

~~(TS//REL TO USA, FVEY)~~ To mitigate the strategic risk [REDACTED] and to address the operational risk related to the above mentioned critical operational elements, USCYBERCOM continues to work with OSD(P), the Joint Staff, our Interagency partners, and our Coalition teammates to develop and refine policy and processes. If cyber operations are not conducted in strict adherence to our guiding authorities and policies, then the strategic risk [REDACTED] increases. Closely coordinated notification strategies, when required, between the DoD, DoS, and the IC, [REDACTED] are paramount to operational success.

~~(S//REL TO USA, FVEY)~~ The planning and execution of OGS demonstrates the value in elevating policy concerns to OSD(P) throughout the planning process to identify and resolve concerns concurrent with operational deconfliction between Combatant Commands (CCMDs) and intelligence equity deconfliction within the IC. [REDACTED]

[REDACTED]. Although the Joint Interagency Coordination process resulted in Interagency non-concurs, the non-concurs were resolved in a manner that accounted for equities, but ensured the timing and tempo of the operations achieved the desired effect. Joint Interagency Coordination process is discussed further in the *Lessons Learned* section.

(U) LESSONS LEARNED

~~(TS//REL TO USA, FVEY)~~ Planning and executing OGS provided the opportunity to truly exercise the [REDACTED]. While the command learned many lessons throughout the process, a number of areas stand out. The primary recommendations are described below; Appendix C includes more-detailed discussions.

~~(U//FOUO)~~ **Authorities and Policies.** Normalize [REDACTED] approval processes. Interagency policies and processes are not established to meet the demand for speed, scale, and scope required for effective cyberspace operations, including [REDACTED] Joint Interagency Coordination process that is still in a transitional state.

~~(S//REL TO USA, FVEY)~~ [REDACTED] remains an unresolved policy issue [REDACTED]. However, cyberspace operations policy should allow USCYBERCOM to [REDACTED]

~~(U//FOUO)~~ **Joint Interagency Coordination.** Normalize Interagency policies and processes to adjudicate Interagency non-concurs expeditiously in a manner that supports dynamic targeting within the cyber domain.

~~(TS//SI//REL TO USA, FVEY)~~ **Collection Management.** Incorporate positive lessons learned into standard practices, collection management tradecraft, and products for future operations. Strengthen coordination with allies on collection and reporting capabilities and plans, with a particular emphasis on [REDACTED]. In addition,

[REDACTED] Establish procedures to [REDACTED]

~~TOP SECRET//SI//REL TO USA, FVEY//CS-1~~

[REDACTED]
[REDACTED] related to the operation.

(S//REL TO USA, FVEY) [REDACTED] Additional resourcing of USCYBERCOM's [REDACTED] in cyberspace element [REDACTED] would allow more robust support to operational planning and execution.

(U//FOUO) **Targeting.** Adhering to established vetting standards should reduce the time and effort required advance the targeting process as all parties get to "vote"/comment at the same time. Targets should be developed to support established plans, containing measures of performance (MOPs) and measures of effectiveness (MOEs) that are clearly linked to well-defined objectives. Establish measureable MOEs based on determination of what intelligence is known or likely to be known about adversary activities.

(TS//SI//REL TO USA, FVEY) [REDACTED]
[REDACTED]
[REDACTED].

(S//REL TO USA, FVEY) **Political Military Assessments.** Given the likelihood that USCYBERCOM will be conducting more frequent and widely-scoped cyber operations throughout the global Internet infrastructure in the future, [REDACTED] [REDACTED] would help expedite the request and approval process and provide planners with [REDACTED] factored up front into cyber CONOPs.

(U) WAY AHEAD

(S//REL TO USA, FVEY) The initial approved [REDACTED] for OGS was [REDACTED], concluding at [REDACTED]. Based upon the experiences and lessons of OGS, USCYBERCOM will inform and coordinate [REDACTED] with our Interagency partners, in order to disrupt [REDACTED] combined with synchronized effects from the Coalition and USCENCOM. Additionally, JTF ARES will [REDACTED] [REDACTED]. USCYBERCOM will continue a running assessment to inform a decision point [REDACTED] [REDACTED].

(TS//REL TO USA, FVEY) USCYBERCOM and JTF ARES will continue to develop future operations focused on impacting the ISIL media brand and defeating ISIL's online presence. These operations will be a viewed as a part of a larger, sustained campaign and not one-time effort. This way forward will require [REDACTED] [REDACTED]



(U) APPENDICES

- A. (U//~~FOUO~~) Assessment of Task Accomplishment
- B. (U//~~FOUO~~) The Joint Interagency Coordination Timeline



(U//FOUO) APPENDIX A. ASSESSMENT OF TASK ACCOMPLISHMENT

(U//FOUO) This appendix describes our framework for assessing task accomplishment, which captures how well we executed Operation GLOWING SYMPHONY. It is graphically depicted in Figure 2.

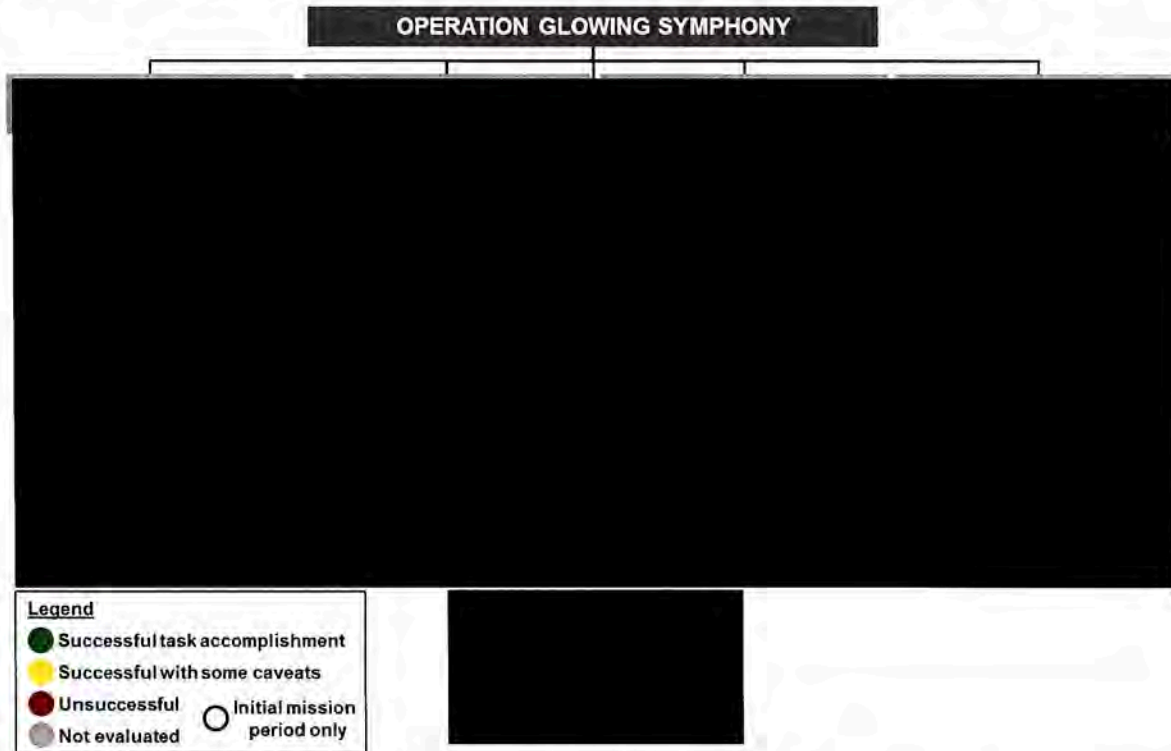


Figure 2. (TS//SI//REL TO USA, FVEY) OGS Assessment of Task Accomplishment.

(C//REL TO USA, FVEY) The framework is broken down by phase from the OGS Concept of the Operation (CONOP), with supporting measures of performance and indicators. Actual numerical data for each indicator is shown in blue. After each indicator description are the Coalition partners represented in the data. The stop light circle next to each indicator assesses that particular measure against the thresholds established in the CONOP. The gray circles represent indicators that are not important for assessing task accomplishment, but still contribute to the understanding of Coalition activities. Black outlined circles indicate those measures that only apply to the initial mission period and were not updated as the operation continued. The full legend is shown on the bottom left of the figure.

(TS//SI//REL TO USA, FVEY) Overall, we assess the task execution of OGS as green, or successful. Only two evaluated indicators are amber; the remainder are green. The first indicator, [REDACTED], is amber because the teams were not able to [REDACTED]. [REDACTED] had no negative impact on the mission. The second amber indicator is that for [REDACTED] which was the original intent of the CONOP. [REDACTED]. [REDACTED]. The threshold for green [REDACTED].

(U//~~FOUO~~) Note that some reporting shows different numbers for [REDACTED]
[REDACTED]. The difference is that here, we do not count the [REDACTED]
[REDACTED].

(U//FOUO) APPENDIX B. THE JOINT INTERAGENCY COORDINATION TIMELINE

(S//REL TO USA, FVEY) This appendix describes the Joint Interagency Coordination process leading up to the execution of Operation GLOWING SYMPHONY (OGS).

(TS//REL TO USA, FVEY) At the operational level, USCYBERCOM planners identified three key decision points (DPs) leading up to the operation. The DPs are described in Table 1 below.

Table 1. (TS//REL TO USA, FVEY) OGS Decision Points.

DP	Event	Decision Required	Decision Criteria	JIATF Actions
1				
2				
3				

(TS//SI//REL TO USA, FVEY/FISA) The overall Joint Interagency Coordination timeline is shown in Figure 3. The Concept of Operation (CONOP) for Operation GLOWING SYMPHONY was released to our Joint Interagency Task Force (JIATF) partners [REDACTED]

[REDACTED] United States Cyber Command (USCYBERCOM) participated in a Video Teleconference (VTC) with members of the Office of the Secretary of Defense for Policy (OSD(P)) and the Department of State (DoS). The purpose of the VTC was to present a detailed overview of the CONOP [REDACTED]

[REDACTED] Joint Task Force (JTF) ARES hosted an operations conference with key stakeholders. During [REDACTED] they conducted advanced target development, force allocation and concluded with their initial synchronization of actions by all those participating in the operation. The results of this conference helped address some of the concerns raised by our Interagency partners. [REDACTED] USCYBERCOM chaired a Joint Targeting Coordination Board (JTCB) with the JIATF and Combatant Command (CCMD) representatives. This board validated the Islamic State in Iraq and the Levant (ISIL) [REDACTED] as a valid military target. Following this, the CONOP Package was submitted to the Department of Justice [REDACTED].



Figure 3. (TS//REL TO USA, FVEY) OGS Joint Interagency Coordination Timeline.

(TS//SI//REL TO USA, FVEY/FISA) At the completion of the Joint Interagency Coordination process [REDACTED] Department/Agencies non-concurred. The results were briefed to the Commander, USCYBERCOM (CDRUSCYBERCOM) and Commander, US Strategic Command (CDRUSSTRATCOM), and USCYBERCOM initiated a series of Key Leader Engagements to resolve the non-concurs. The primary concerns by Interagency partners centered on [REDACTED]. USCYBERCOM was unable to resolve some of the concerns [REDACTED] CDRUSCYBERCOM elevated [REDACTED] to the Secretary of Defense (SecDef), per policy. A series of Deputies Committees (DC) and Principles Committees (PC) met [REDACTED] to resolve the non-concurs. During this process, [REDACTED] the OGS concept of the operation was adjusted to [REDACTED].

[REDACTED]

[REDACTED] SecDef approved the execution of OGS as scoped through the DC/PC process. USCYBERCOM initiated operations [REDACTED].

(TS//REL TO USA, FVEY) The time required to elevate and negotiate the Interagency non-concurs prevented USCYBERCOM from [REDACTED] as originally designed. While reporting indicates that the execution of OGS [REDACTED] within ISIL media [REDACTED]

[REDACTED]
[REDACTED] ISIL media infrastructure.

(U//FOUO) APPENDIX C. LESSONS LEARNED

~~(S//REL TO USA, FVEY)~~ This appendix describes the observations and recommendations associated with our primary lessons learned as a result of planning and executing Operation GLOWING SYMPHONY.

~~(S//REL)~~ AUTHORITIES AND POLICIES

~~(TS//REL TO USA, FVEY)~~ **Observation.** Although the collateral effects estimate (CEE) for OGS was determined to be no CEE, the operation required [REDACTED] approval because [REDACTED] within the context of [REDACTED].

~~(TS//NF)~~ **Discussion.** [REDACTED] was the authority used during the conduct of OGS. [REDACTED] approved by the President of the United States (POTUS) [REDACTED]

[REDACTED]

[REDACTED].

~~(TS//NF)~~ In the event of a non-concur from a voting member of the Interagency, [REDACTED]. USCYBERCOM exercised this exact process and the timeline in support of the OGS approval (see Appendix B). The non-concurs highlighted [REDACTED]

[REDACTED]

[REDACTED].

~~(U//FOUO)~~ **Recommendation.** Normalize [REDACTED] approval processes. Interagency policies and processes are not established to [REDACTED] Joint Interagency Coordination process that is still in a transitional state.

~~(S//REL)~~ [REDACTED]

~~(TS//REL TO USA, FVEY)~~ **Observation.** Prior to OCO actions [REDACTED]

(TS//NF) Discussion. [REDACTED] when operating under the authorities granted via [REDACTED]

[REDACTED]

[REDACTED]

(TS//NF) Despite the plan and agreement of [REDACTED]

[REDACTED]

USCYBERCOM continues to analyze reporting to codify the degree to which the adversary exploited this opportunity.

(TS//REL TO USA, FVEY) [REDACTED]

[REDACTED]

[REDACTED]. Should follow-on operations propose more invasive tactics and/or utilize more sophisticated capabilities, it would be ill-advised to risk critical infrastructure and/or capabilities unnecessarily.

(S//REL TO USA, FVEY) Recommendation. [REDACTED] remains an unresolved policy issue [REDACTED]. However, cyberspace operations policy should allow USCYBERCOM to [REDACTED].

(U//FOUO) JOINT INTERAGENCY COORDINATION

(TS//REL TO USA, FVEY) Observation. [REDACTED] establish a Joint Interagency Task Force (JIATF) that is focused on [REDACTED]. Specifically, the JIATF [REDACTED] as part of the operational review and approval process in support of [REDACTED]. However, [REDACTED] does not [REDACTED].

(TS//NF) Discussion. [REDACTED] requires targets be deconflicted in accordance with the Trilateral Memorandum of Agreement (Trilat MOA) [REDACTED]. Additionally, [REDACTED]

[REDACTED] a Strike Package is required that consists of an Intelligence/ Technical Gain/Loss Assessment (IGL/TGL), Political Military Assessment, Legal Review, and CONOP.

As implemented, each OCO mission requires these documents. In addition to deconfliction under the Trilat MOA, [REDACTED] requires [REDACTED]

[REDACTED]

(TS//REL TO USA, FVEY) The amount of informal meetings, briefings, and overall information sharing that occurred was extremely in-depth and time consuming for both USCYBERCOM and JTF ARES staffs. If this same level of detail is required for each proposed action during an OCO mission [REDACTED]

[REDACTED]

Further discussion of the Joint Interagency Coordination process and timeline can be found in Appendix B. Cyber operations against ISIL should be [REDACTED]

[REDACTED]

(TS//REL TO USA, FVEY) As a result of the Interagency coordination, OGS was [REDACTED] to be deliberated under different policy decisions. [REDACTED] as a follow-on Combatant Command (CCMD) action.

(U//FOUO) **Recommendation.** Normalize Interagency policies and processes to adjudicate Interagency non-concurs expeditiously in a manner that supports dynamic targeting within the cyber domain.

(U//FOUO) COLLECTION MANAGEMENT

(TS//SI//REL TO USA, FVEY) **Observation.** Through extensive pre-operation coordination, all US intelligence agencies were highly attuned to the OGS plan and were postured to focus collection assets to gauge the impact of OGS on ISIL members. [REDACTED]

[REDACTED]

(TS//SI//REL TO USA, FVEY) **Discussion.** USCYBERCOM J2 and JTF ARES developed [REDACTED]

[REDACTED]

[REDACTED]. Multiple meetings in the pre-operational phase with IC/DoD/allied intelligence representatives ensured high awareness of OGS collection requirements. [REDACTED]

(TS//SI//REL TO USA, FVEY) **Recommendation.** Incorporate positive lessons learned into standard practices, collection management tradecraft, and products for future operations. [REDACTED]

(b) (1) Sec. 1.4 (a) (d) (g) , 1.7 (e)

(b) (5)

~~TOP SECRET//SI//NFORNA//REA~~

[REDACTED]. In addition, codify collection timelines and deliverables to [REDACTED]

[REDACTED] related to the operation.

(U//FOUO) [REDACTED]

(S//NF) **Observation.** USCYBERCOM's [REDACTED] capabilities [REDACTED] contributed significantly to OGS planning and execution; however,

[REDACTED]

(S//NF) **Discussion.** DoD's Cyber Strategy emphasizes [REDACTED] in cyberspace operations; however,

[REDACTED]

(S//NF) **Recommendation.** USCYBERCOM's [REDACTED] in cyberspace element could provide substantial support to operational planning,

[REDACTED]

[REDACTED] should also be requested and incorporated into the operation.

(U//FOUO) TARGETING

(~~TS//SI//REL TO USA, FVEY~~) **Observation.** [REDACTED]

[REDACTED]

[REDACTED]. This made the target vetting process for OGS lengthy and difficult, as USCYBERCOM and JTF ARES personnel had to frequently

[REDACTED]

(S//REL TO USA, FVEY/FISA) **Discussion.** [REDACTED]. As such, it is recommended that it be vetted with the CCMDs as well as IC partners [REDACTED]. The target was sent out for vetting [REDACTED] IC partners, but [REDACTED]

[REDACTED]

~~TOP SECRET//SI//NFORNA//REA~~

[REDACTED] with CCMDs and IC vetting agencies. Objectives for the mission were [REDACTED]

(TS//SI//REL TO USA, FVEY) With regard to the additional information requirement to support target development and IC vetting, the inability of JTF ARES to [REDACTED] from teams under operational control (OPCON) of JTF ARES led to [REDACTED] IC vetting process for [REDACTED]. JTF ARES is [REDACTED] that relates to JTF ARES operational needs.

(U//FOUO) **Recommendation 1.** Adhering to established vetting standards should reduce the time and effort required advance the targeting process as all parties get to "vote"/comment at the same time. Targets should be developed to support established plans, containing MOPs and MOEs that are clearly linked to well-defined objectives. Establish measurable MOEs based on determination of what intelligence is known or likely to be known about adversary activities.

(TS//SI//REL TO USA, FVEY) **Recommendation 2.** [REDACTED]

(U//FOUO) [REDACTED] **DATA EXPLOITATION**

(S//REL TO USA, FVEY) **Observation.** OGS plans factored the possibility of adversary data recovery and acknowledged the need for exploiting that data, but did not [REDACTED]. Additionally JTF ARES did not anticipate [REDACTED] priorities were established for exploiting the data, but [REDACTED] policies are needed to clarify handling procedures for captured data.

(TS//NF) **Discussion.** JTF ARES established [REDACTED] priorities for exploiting captured data: [REDACTED] which JTF ARES accomplished by working through HQs CYBERCOM J3 in accordance with CYBERCOM OCO data policies. [REDACTED] JTF ARES worked through CYBERCOM to identify sources for short-term support.

(S//REL TO USA, FVEY) **Recommendation.** Future plans should account for [REDACTED]

[REDACTED]
[REDACTED]. USCYBERCOM should formulate [REDACTED] policy and capability to support any USCYBERCOM JTF or JFHQ-C that covers all future operations.

(U//FOUO) POLITICAL MILITARY ASSESSMENTS

~~(S//REL TO USA, FVEY)~~ **Observation.** The current [REDACTED] timeline for conducting a Political Military Assessment (PMA) [REDACTED] [REDACTED] for time-sensitive operations against adversary infrastructure.

~~(S//NF)~~ **Discussion.** [REDACTED] to produce PMAs for the target elements [REDACTED] [REDACTED] significant challenges in meeting the timeline, especially factoring the need for [REDACTED]. Other agencies, [REDACTED] were similarly stressed to meet the deadline. [REDACTED] to staff a required PMA and the IC is given another [REDACTED] to review.

~~(S//REL TO USA, FVEY)~~ **Recommendation.** Given the likelihood that USCYBERCOM will be conducting more frequent and widely-scoped cyber operations throughout the global Internet infrastructure in the future, [REDACTED] [REDACTED] would help expedite the request and approval process and provide planners with [REDACTED] factored up front into cyber CONOPs.

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