# (U) COMPUTER NETWORK OPERATIONS
## (U) GENIE

| This Exhibit is SECRET//NOFORN | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | FY 2011[1] Actual | FY 2012 Enacted | | | FY 2013 Request | | | FY 2012 — FY 2013 | |
| | | Base | OCO | Total | Base | OCO | Total | Change | % Change |
| **Funding ($M)** | 615.2 | 562.0 | 74.2 | 636.2 | 589.2 | 62.5 | 651.7 | 15.6 | 2 |
| **Civilian FTE** | 1,110 | 1,238 | — | 1,238 | 1,231 | — | 1,231 | -7 | -1 |
| **Civilian Positions** | 1,110 | 1,238 | — | 1,238 | 1,231 | — | 1,231 | -7 | -1 |
| **Military Positions** | 456 | 572 | — | 572 | 639 | — | 639 | 67 | 12 |

[1]Includes enacted OCO funding.                                   Totals may not add due to rounding.

# (U) Project Description

(TS//SI//NF) The GENIE Project underpins NSA/CSS' Computer Network Operations (CNO) Endpoint capabilities conducted by the Tailored Access Operations (TAO) Group. The GENIE Project plans, equips, and conducts Endpoint operations that actively compromise otherwise intractable targets and complement Midpoint programs that passively eavesdrop on communications links. GENIE Endpoint activities use surreptitious virtual or physical access to create and sustain a presence inside targeted systems or facilities. Targeted systems are compromised electronically, typically providing access to system functions as well as data. System logs and processes are modified to cloak the intrusion, facilitate future access, and accomplish other operational goals. Data of interest is harvested directly or pushed (shaped) to Midpoint collectors (a form of active-passive integration) and can also assist HUMINT, law enforcement, and DoD Information Operation activities as authorized.

(TS//SI//REL TO USA, FVEY) To maximize agility and minimize risk and cost, a targeted system is usually subverted remotely, via existing tools/implants and infrastructure. When remote access is not possible, field operations are undertaken – usually with the aid of other IC or DoD activities – to physically place hardware implants or software modifications into or near targeted systems, or, if absolutely necessary, to conduct short-range collection. Hardware and software engineering is required to upgrade capabilities, through anticipatory efforts against leading commercial products as well as more directed work to fill key gaps against specific targets.

(S//REL TO USA, FVEY) GENIE Endpoint activities support the Comprehensive National Cybersecurity Initiative (CNCI) and the IC's Next Generation Wireless (NGW) IC Wireless Implementation Plan (ICWIP) aimed at preventing technological surprise by having the right NGW capabilities at the right time while achieving cost savings through cross-IC collaboration.

(S//REL TO USA, FVEY) GENIE Endpoint capabilities are leveraged to support Title 10 CNO under USCYBERCOM direction and legal authority. Similarly, TAO uses MIP Intelligence Support to Information Operations resources to posture the Endpoint infrastructure and tools with sufficient diversity to conduct Title 10 CNO. Additionally, GENIE Endpoint operations are conducted to detect foreign cyber operations to support dynamic defense of DoD networks.

(TS//SI//REL TO USA, FVEY) Exploitation of Endpoint devices (e.g., personal computers, network servers and routers, computer-controlled cellular systems and infrastructures, mobile computing devices, etc.) contributes to hundreds of SIGINT reports each quarter, including CT-related and other SIGINT reports that address the highest priorities of the National Intelligence Priorities Framework (NIPF). GENIE Endpoint methods also provide law enforcement, the military, and other customers with geolocation, lead information, target access, and unique technical services. The broad range of GENIE activities requires continuous technical development to keep pace with the rapid, market driven evolution of IT products and technology, which includes tools/implants

remaining stealthy against ever vigilant personal security products (e.g. anti-virus software and firewalls) that could detect and thwart CNO.

(TS//SI//REL TO USA, FVEY) GENIE Endpoint operations are performed over foundational infrastructure capabilities, which must remain robust and defend against hostile intrusion. VALIANTEAGLE is a major system acquisition that will incrementally provide more efficient planning, management, and execution of CNO to support growing and diverse Computer Network Exploitation (CNE), Computer Network Defense (CND), and Computer Network Attack (CNA) mission requirements. This Project contains the GENIE Operations, Foundation Platforms, Point Solutions, Deployable Tools, and VALIANTEAGLE Sub-Projects.

(U) Base resources in this project are used to:

- (TS//SI//REL TO USA, FVEY) Develop tools and integrate mission management capabilities with partners across the IC in response to cyber security threats.

- (TS//SI//REL TO USA, FVEY) Sustain covert domestic and overseas collection platforms (i.e., listening posts) working in close collaboration with the FBI and the CIA.

- (TS//SI//REL TO USA, FVEY) Defend the Endpoint operational infrastructure against increasing foreign and domestic cyber threats.

- (TS//SI//REL TO USA, FVEY) Enhance GENIE's Endpoint mission management and processing infrastructure to more efficiently and effectively plan, manage, and execute diverse sets of CNO operations. VALIANTEAGLE will integrate into the TURBULENCE architecture and other corporate systems.

- (S//SI//REL TO USA, FVEY) Provide specialized training for an increased number of CNO target network analysts and exploitation operators to support increased missions.

- (TS//SI//REL TO USA, FVEY) Develop and support Endpoint exploitation and collection tools for data and voice networks, computer hardware and software, specialized solutions for hard target exploitation, and geolocation capabilities. Develop and sustain software and hardware implants designed to circumvent security technologies used by targets.

- (TS//SI//REL TO USA, FVEY) Develop NGW exploitation capabilities supporting the ICWIP.

- (S//SI//REL TO USA, FVEY) Support the SIGINT exploitation of NGW, a MIP/NIP collective investment. This request reflects only the NIP portion of the program. Refer to MIP NSA volume for details on MIP related activities.

- (TS//SI//REL TO USA, FVEY) Provide a covert data exfiltration, and command & control infrastructure, for voice network exploitation and collection against targets that utilize Code Division Multiplexing Access 2000 (CDMA-2000) and Universal Mobile Telecommunications Systems (UMTS) technologies. Deliver geolocation capabilities for commercially-employed NGW technologies (e.g., CDMA-2000, UMTS including Long Term Evolution) to ensure continued operational success in locating high priority targets that use evolving wireless technology.

- (TS//SI//REL TO USA, FVEY) Provide high quality voice collection by delivering implants that can identify select voice conversations of interest within a target network and exfiltrate select cuts back to NSA/CSS.

- (TS//SI//REL TO USA, FVEY) Provide a diverse CNO toolset to allow for the prosecution of varied CNO missions with increased operational security.

- (TS//SI//NF) Develop shaping capabilities to exfiltrate CNE through passive collection systems to more effectively handle the increasing volumes of Endpoint derived data, and conversely minimize unnecessary exposure of the covert infrastructure. Further, shaping extends the reach of passive collection systems by ensuring network traffic of interest passes a passive sensor in order to be collected and processed.

(U) There are no new activities in this Project for FY 2013.

(U) OCO resources in this project are used to:
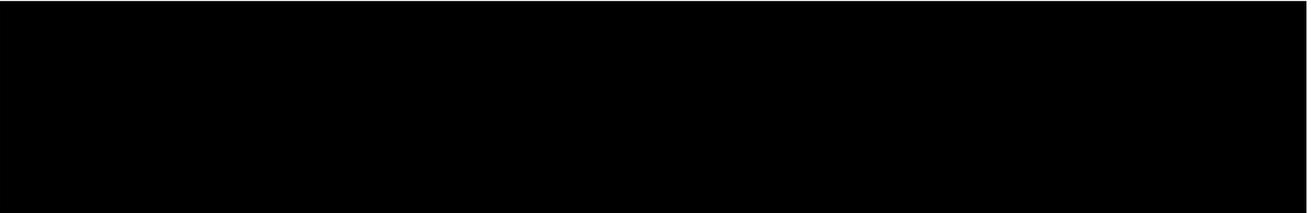
- (TS//SI//REL TO USA, FVEY) Develop, deploy, and sustain CNO access to the most sensitive of the Pakistan and Afghanistan government's leadership communications.

- (TS//SI//REL TO USA, FVEY) Keep pace with terrorists' use of the latest in telecommunication and information technology. It is imperative that GENIE lean as far forward as possible in developing CNO exploitation tools against new technologies (e.g., Windows 8, 9). Unlike nation/states that migrate in a more cost effective manner, terrorists often jump from technology to technology as a means of providing security for their communications. These funds enable Endpoint operations to be better positioned for these changes in order to maintain coverage on high value terrorist targets.

(U) The CCP expects this Project to accomplish the following in FY 2013:

- (TS//SI//REL TO USA, FVEY) Develop and deploy CNO implants for routers, switches, and firewalls from multiple product vendor lines directed at satisfying Endpoint specific intelligence collection requirements.

- (TS//SI//REL TO USA, FVEY) Enable automated and on-demand multi-hop operations to reduce the number of manual interactive operations required and enable deeper penetration into target networks.

- (S//SI//REL TO USA, FVEY) Increase reliance on commercial products for hardware bridging implant concealments to improve cost and shorten development cycle.

- (S//SI//REL TO USA, FVEY) Develop and deliver capabilities that will allow Endpoint implants to persist in target computers/servers through technology upgrades, and enable the development of new methodologies to persist and maintain presence within hard target networks. Due to the ever increasing capabilities of internet security technologies, an emphasis will be placed on developing persistent solutions that incorporate stealth techniques.

- (TS//SI//REL TO USA, FVEY) Increase serialized reporting from Endpoint collection against hard targets to 55-60 percent, a 5 percent increase over the FY 2012 target level.

- (S//SI//REL TO USA, FVEY) Modernize the Endpoint infrastructure by executing the VALIANTEAGLE acquisition. Verify that developed prototype capabilities satisfy requirements via the Developmental Test/ Operational Assessment activity.

- (TS//SI//REL TO USA, FVEY) Increase the number of Endpoint Points-of-Presence (PoPs) worldwide to a range of 85,000-96,000, a 13 percent increase over the FY 2012 target.

- (TS//SI//REL TO USA, FVEY) Increase Endpoint active accesses to 9,000-10,000, a 12 percent increase over the FY 2012 target level.

- (TS//SI//NF) Deliver Endpoint implants capable of shaping high capacity target traffic of interest to passive collection platforms. Shaping is a key element in active-passive integration (i.e., leveraging distinct Endpoint and Midpoint collection capabilities in new innovative ways to increase efficiency).

- (TS//SI//REL TO USA, FVEY) Increase the number of Endpoint accesses which are cited in serialized SIGINT product reports to 750-800, a 25 percent increase over the FY 2012 target.

**(U) Changes From FY 2012 to FY 2013:**

**(SI//NF) Deployable Tools: +$16.2 million (+$19.4 Base, -$3.2 OCO), -10 civilian positions, 2 military positions.** The aggregate increase is the net result of:

- (U) Increases:

  — (S//NF) $25.1 million provides, as part of the Community investment, resources to maintain and expand the Nation's CNE capability by additional covert purchases of software vulnerabilities in support of CNE tool diversification and improve the ability for CNE tools to persist on target systems.

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  — (S//NF) $4.9 million base which reflects a FY 2012 Congressional Adjustments not sustained in FY 2013.

  — (S//NF) $1.1 million in civilian pay and benefits.

  — (S//NF) Two military positions supports testing and evaluation of on-net tool requirements.

- (U) Decreases:

  — (S//NF) $13.2 million in CT OCO) reduces the development of implants against wireless monitoring systems.

  — (S//NF) $5.2 million in support deficit reduction efforts.

  — (S//NF) $4.0 million to support higher priority activities in the VALIANTEAGLE Sub-Project.

  — (S//NF) 10 civilian positions reflects reduced support to the analysis of hardware product vulnerability and exploitation techniques and the development of tools necessary for adaptation to generational changes in Wireless Data Networking.

- (U) Realignments:

  — (S//NF) $2.5 million out to the GENIE Operations Sub-Project to properly align resources.

**(S//NF) Foundation Platforms: -$11 million (-$11 Base), 3 civilian positions, 4 military positions.** The aggregate decrease is the net result of:

- (U) Increases:

  — (S//NF) $5.5 million for implant testing services to mitigate Personal Security Product threats prior to deployment into target environments and maintains and expands the Nation's CNE capability.

  — (S//NF) $3.0 million which reflects a FY 2012 Congressional adjustment not sustained in FY 2013.

  — (S//NF) $1.8 million in civilian pay and benefits.

— (S//NF) Three civilian positions reflects centralization of mission responsibilities in support of Endpoint engineering, data flow management, next generation development, testing & operations synchronization; as well as support of remote operations, software capabilities and mission management infrastructure technologies at NSA/CSS Texas.

— (S//NF) Four military positions supports remote operations, software capabilities, and mission management infrastructure technologies at NSA/CSS Texas.

- (U) Decreases:

  — (S//NF) $13.7 million in contractor support to the mission infrastructure operations center due to streamlining of operations.

  — (S//NF) $6.4 million in support of deficit reduction.

  — (S//NF) $1.2 million to the GENIE Operations Sub-Project for increased operations support.

**(S//NF) GENIE Operations: +$6.2 million (+$14.7 Base, -$8.4 OCO), 1 civilian position, 61 military positions.** The aggregate increase is the net result of:

- (U) Increases:

  — (S//NF) $14.4 million to integrate TURBULENCE capabilities into TAO Infrastructure, as part of the Community investment to maintain and expand the Nation's CNE capability.

  — (S//NF) $2.6 million in civilian pay and benefits.

  — (S//NF) $1.7 million which reflects a FY 2012 Congressional adjustment not sustained in FY 2013.

  — (S//NF) One civilian and 61 military positions supports developing and managing domestic and overseas off-net physical access capabilities to deploy technology required to conduct Endpoint operations.

- (U) Decreases:

  — (TS//SI//NF) $5.0 million of OCO reflects the request for GSM location capability now being requested in the MidPoint RF Access EC, Tailored RF Solutions Project in the Tactical SIGINT Solutions Sub-Project.

  — (S//NF) $4.2 million to program management support.

  — (TS//SI//NF) $3.4 million of OCO reflects the end of a one year supply chain effort to deliver implanted  equipment destined for Al-Qaeda.

  — (S//NF) $1.7 million in support of deficit reduction.

  — (S//NF) $1.8 million to off net enabling CNE activities.

- (U) Realignments:

  — (S//NF) $2.5 million in from the Deployable Tools Sub-Project to support GENIE operator and analyst unique training.

  — (S//NF) $1.2 realignment in from the Foundation Platforms Sub-Project for increased operations support.

**(S//NF) VALIANTEAGLE: +$4 million (+$4 Base).** Increase of $4.0 million reflects realignment from the Deployable Tools Sub-Project for improved program management and systems engineering activities.

**(S//NF) Point Solutions: +$0.2 million (+$0.2 Base), -1 civilian position.** The aggregate increase is the net result of:

- (U) Increases:

  — (S//NF) $0.8 million increase which reflects a FY 2012 Congressional adjustment not sustained in FY 2013.

- (U) Decreases:

  — (S//NF) $0.6 million to contractor support for mission testing services.

  — (S//NF) One civilian position reduces capability to support the requirements process within TAO, target network analysis, target development, and exploitation strategy development as well as developing procedures for and ensuring legal and policy adherence.

| GENIE Project Budget Chart<br>FY 2013 Budget Request by Appropriation Account<br>This Exhibit is SECRET//NOFORN | | | Funds — Dollars in Millions | | |
|---|---|---|---|---|---|
| **Subproject** | **Description** | **Resourcing** | **FY 2011** | **FY 2012** | **FY 2013** |
| *Military Personnel, Air Force* | | *Positions* | *91* | *153* | *202* |
| Deployable Tools | | Positions | 12 | 10 | 6 |
| Foundation Platforms | | Positions | — | — | 2 |
| GENIE Operations | | Positions | 78 | 142 | 193 |
| Point Solutions | | Positions | 1 | 1 | 1 |
| *Military Personnel, Army* | | *Positions* | *103* | *107* | *121* |
| Deployable Tools | | Positions | 3 | 3 | 5 |
| GENIE Operations | | Positions | 100 | 104 | 116 |
| *Military Personnel, Marine Corps* | | *Positions* | *12* | *33* | *33* |
| Deployable Tools | | Positions | 1 | — | — |
| GENIE Operations | | Positions | 11 | 33 | 33 |
| *Military Personnel, Navy* | | *Positions* | *250* | *279* | *283* |
| Deployable Tools | | Positions | 15 | 18 | 22 |
| Foundation Platforms | | Positions | — | — | 2 |
| GENIE Operations | | Positions | 235 | 261 | 259 |
| *Operation and Maintenance, Air Force* | | *Funds* | *0.79* | *0.09* | *0.19* |
| | | *Positions* | *10* | *1* | *2* |
| GENIE Operations | Pay and Benefits | Base | 0.79 | 0.09 | 0.19 |
| | | Positions | 10 | 1 | 2 |

| GENIE Project Budget Chart<br>FY 2013 Budget Request by Appropriation Account<br>This Exhibit is SECRET//NOFORN | | | Funds — Dollars in Millions | | |
|---|---|---|---|---|---|
| **Subproject** | **Description** | **Resourcing** | **FY 2011** | **FY 2012** | **FY 2013** |
| ***Operation and Maintenance, Defense-Wide*** | | *Funds* | *341.75* | *312.18* | *343.74* |
| | | *Positions* | *914* | *1046* | *1229* |
| Deployable Tools | Communications and Utilities | Base | 0.71 | — | — |
| | Contract Services | Base | 48.65 | 49.44 | 44.85 |
| | Equipment | Base | 3.12 | — | 0.02 |
| | Pay and Benefits | Base | 50.96 | 55.42 | 77.80 |
| | Rental Payments | Base | — | — | 1.00 |
| | Supplies and Materials | Base | 0.02 | — | — |
| | Travel and Transportation | Base | 0.04 | 0.07 | 0.06 |
| | | Positions | 374 | 408 | 554 |
| Foundation Platforms | Communications and Utilities | Base | 0.04 | — | — |
| | Contract Services | Base | 17.90 | 26.39 | 23.56 |
| | Equipment | Base | 3.79 | 0.24 | 0.22 |
| | | OCO | 0.11 | — | — |
| | Pay and Benefits | Base | 13.49 | 19.23 | 25.52 |
| | Printing and Reproduction | Base | <0.01 | — | — |
| | Supplies and Materials | Base | 0.13 | 0.13 | 0.12 |
| | Travel and Transportation | Base | 0.11 | — | — |
| | | Positions | 106 | 148 | 184 |
| GENIE Operations | Communications and Utilities | Base | 3.30 | — | — |
| | | OCO | 1.98 | — | — |
| | Contract Services | Base | 35.38 | 31.81 | 45.02 |
| | | OCO | 80.64 | 27.94 | 18.92 |
| | Equipment | Base | 1.21 | 2.20 | 1.84 |
| | | OCO | 5.94 | — | 2.60 |
| | Land and Structures | Base | 1.04 | — | — |
| | | OCO | 0.30 | — | — |
| | Pay and Benefits | Base | 58.01 | 65.70 | 69.40 |
| | Printing and Reproduction | Base | 0.01 | <0.01 | <0.01 |
| | Supplies and Materials | Base | 0.37 | 2.04 | 14.46 |
| | | OCO | 0.05 | — | — |
| | Travel and Transportation | Base | 3.97 | 20.08 | 4.08 |
| | | OCO | 0.06 | — | — |
| | | Positions | 431 | 488 | 490 |

| GENIE Project Budget Chart<br>FY 2013 Budget Request by Appropriation Account<br>This Exhibit is SECRET//NOFORN | | | Funds — Dollars in Millions | | |
| --- | --- | --- | --- | --- | --- |
| **Subproject** | **Description** | **Resourcing** | **FY 2011** | **FY 2012** | **FY 2013** |
| Point Solutions | Communications and Utilities | Base | 0.01 | — | — |
| | Contract Services | Base | 9.86 | 9.57 | 11.99 |
| | Equipment | Base | — | 1.66 | 1.49 |
| | Pay and Benefits | Base | 0.41 | 0.27 | 0.14 |
| | Supplies and Materials | Base | 0.03 | — | — |
| | Travel and Transportation | Base | 0.13 | — | — |
| | | Positions | 3 | 2 | 1 |
| VALIANTEAGLE | Contract Services | Base | — | — | 0.61 |
| *Procurement, Defense-Wide* | | *Funds* | *—* | *—* | *5.56* |
| VALIANTEAGLE | Equipment | Base | — | — | 5.56 |
| *Research, Development, Test, and Evaluation, Defense-Wide* | | *Funds* | *272.64* | *323.90* | *302.25* |
| | | *Positions* | *186* | *191* | *—* |
| Deployable Tools | Communications and Utilities | Base | 0.01 | — | — |
| | Contract Services | Base | 127.00 | 134.58 | 142.61 |
| | | OCO | 14.36 | 39.24 | 31.71 |
| | Equipment | Base | 7.21 | 7.26 | 17.06 |
| | | OCO | 5.90 | 5.00 | 9.30 |
| | Pay and Benefits | Base | 22.85 | 21.27 | — |
| | Rental Payments | Base | 0.41 | — | 4.00 |
| | Supplies and Materials | Base | — | 0.10 | 0.10 |
| | Travel and Transportation | Base | 0.28 | 0.10 | 0.10 |
| | | Positions | 152 | 156 | — |
| Foundation Platforms | Contract Services | Base | 47.14 | 30.24 | 17.75 |
| | Equipment | Base | 11.36 | 2.19 | 4.72 |
| | Pay and Benefits | Base | 4.96 | 4.50 | — |
| | Supplies and Materials | Base | — | 0.10 | 0.10 |
| | Travel and Transportation | Base | <0.01 | 0.10 | 0.10 |
| | | Positions | 33 | 33 | — |

| GENIE Project Budget Chart<br>FY 2013 Budget Request by Appropriation Account<br>This Exhibit is SECRET//NOFORN | | | Funds — Dollars in Millions | | |
|---|---|---|---|---|---|
| Subproject | Description | Resourcing | FY 2011 | FY 2012 | FY 2013 |
| GENIE Operations | Contract Services | Base | 0.10 | 1.55 | 4.95 |
| | | OCO | 4.00 | 2.00 | — |
| | Equipment | Base | 0.01 | 1.56 | — |
| | | OCO | 6.00 | — | — |
| | Pay and Benefits | Base | 0.15 | 0.27 | — |
| | | Positions | 1 | 2 | — |
| Point Solutions | Contract Services | Base | 19.88 | 27.37 | 26.41 |
| | Equipment | Base | 1.03 | 1.47 | 0.48 |
| VALIANTEAGLE | Contract Services | Base | — | 45.00 | 42.85 |
| | | | | | Totals may not add due to rounding. |