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Congressional Committees

**Nuclear Command, Control, and Communications: Update on Air Force Oversight Effort and Selected Acquisition Programs**

Nuclear command, control, and communications (NC3) is a large and complex system comprised of numerous land-, air-, sea-, and space-based components used to ensure connectivity between the President and nuclear forces. The current NC3 architecture consists of components that support day-to-day nuclear and conventional operations prior to a nuclear event as well as those that provide survivable, secure, and enduring communications through all nuclear threat environments. Though some NC3 systems are specific to the nuclear mission, most support both nuclear and conventional missions. The Department of Defense (DOD) is executing several acquisition efforts to modernize elements of NC3. In addition, the Air Force, which is responsible for the majority of DOD NC3 assets, has begun establishing an oversight structure for its NC3 capabilities and programs.

Since 2013, we have released several products related to our reviews of NC3 as required by congressional defense committees. For example, the Senate Armed Services Committee report accompanying a bill for the National Defense Authorization Act for Fiscal Year 2013 included a provision for us to assess DOD efforts to sustain and improve the NC3 system.<sup>1</sup> We addressed this provision initially through a restricted report on the Family of Advanced Beyond Line-of-Sight Terminals in December 2013, and subsequently issued a classified report on operational assessments of NC3 terminals in February 2014.<sup>2</sup> We also provided a classified briefing to congressional defense committee staff in January 2014 on the extent to which DOD was addressing known NC3 gaps or weaknesses and the steps it was then taking to transform the NC3 systems to provide improved capabilities in the future. We subsequently issued an unclassified summary of that classified briefing in March 2014.<sup>3</sup> In June 2015, we issued a report on several NC3 modernization efforts.<sup>4</sup> In January 2017, we issued a classified report on briefings we provided to congressional defense committee staff in May 2016 regarding the Air Force's efforts to establish its new NC3 oversight structure and on the status of several NC3 modernization efforts.<sup>5</sup>

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<sup>1</sup>S. Rep. No. 112-173, at 199, accompanying S. 3254, 112th Cong. (2012).

<sup>2</sup>GAO, *Nuclear Command, Control, and Communications: DOD Actions Needed to Better Assess Overall System Performance and Address Operational Gaps*, GAO-14-88C (Washington, D.C.: Feb 28, 2014) ; and *Space Acquisitions: DOD Needs More Knowledge Before It Commits to Producing Satellite Terminals Critical to Nuclear Mission*, GAO-14-24SU (Washington, D.C.: Dec. 6, 2013).

<sup>3</sup>GAO, *Nuclear Command, Control and Communications: Review of DOD's Current Modernization Efforts*, [GAO-14-414R](#) (Washington, D.C.: Mar. 18, 2014).

<sup>4</sup>GAO, *Nuclear Command, Control and Communications: Update on DOD's Modernization*, [GAO-15-584R](#) (Washington, D.C.: June 15, 2015).

<sup>5</sup>GAO, *Nuclear Command, Control and Communications: Update on Air Force Oversight Efforts and Selected Programs*, GAO-17-175RC (Washington, D.C.: Jan. 27, 2017).

The Senate Armed Services Committee report accompanying a bill for the National Defense Authorization Act for Fiscal Year 2016 included a provision for us to update our prior reviews of NC3.<sup>6</sup> This is the second phase of our work in response to that provision. We provided in-depth, classified briefings to congressional defense committee staff on the results of this phase in May and June 2017. This report is an unclassified summary of those classified briefings, which expanded on our findings in our January 2017 report to provide an update on (1) the extent to which the Air Force has made progress in establishing a new oversight structure for its NC3 capabilities and programs, and (2) the status of several ongoing acquisition programs in developing NC3 capabilities, including the progress made and remaining challenges for completing those efforts within their planned schedules.

We found that the Air Force has continued to take steps to provide an Air Force-wide NC3 oversight structure for the NC3 Weapon System, but its focus has mainly been on short-term issues to sustain the current systems as it added personnel for its new NC3 oversight structure. According to Air Force officials, the Air Force has built up its understanding of the short-term sustainment needs for the 62 component systems that currently make up the NC3 Weapon System, but has not had the resources to focus on the long-term needs for NC3. For the selected NC3 acquisition programs we reviewed, we found that each program continued to make progress toward meeting its acquisition goals, but most have challenges remaining. For example, four programs have compressed schedules that could result in delays if any issues develop during development, production, or installation of the communication terminals. In addition, two programs with draft schedules continue to plan to proceed into development without benefiting from a key systems engineering review that, in accordance with acquisition best practices, is used to ensure the requirements are feasible and affordable before development contracts are awarded. NC3 program executive office officials stated that they plan to review the acquisition strategies and adjust them as appropriate before the acquisition approaches are finalized.

To address our objectives, we focused our review on the Air Force's steps to establish NC3 oversight processes and procedures, as it is responsible for the majority of NC3 systems and funds approximately 70 percent of DOD's NC3 systems. Additionally, we updated our assessment of the eight programs covered in our January 2017 classified report—which we had chosen because they were some of the largest efforts in terms of estimated cost, or they enable senior leader communications or address other critical NC3 capabilities. Specifically, we reviewed the following programs:

- Common Very Low Frequency Receiver—Increments 1 and 2
- Family of Advanced Beyond Line-of-Sight Terminals
- Global Aircrew Strategic Network Terminal—Increments 1 and 2
- Mission Planning and Analysis System Modernization
- Minuteman Minimum Essential Emergency Communications Network Program Upgrade
- Presidential and National Voice Conferencing Integrator Program

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<sup>6</sup>S. Rep. No. 114-49, at 283, accompanying S.1376, 114th Cong. (2015).

To understand the Air Force's NC3 oversight structure, we reviewed Air Force assessments and planning documents and discussed the plans with cognizant officials from the Air Force Global Strike Command, which is the lead command for all Air Force NC3 efforts, and the Air Force Nuclear Weapons Center, which serves as the integrator of NC3 systems and the Program Executive Office for the acquisition programs. To understand and assess the acquisition progress and remaining challenges for each acquisition program, we reviewed relevant acquisition and management documents, including the most recent program updates, and identified acquisition risks where the programs' ongoing and planned efforts are not consistent with acquisition best practices. We discussed the status of each program with officials from the relevant program offices.

We conducted this performance audit from September 2016 to August 2017 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and observations based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our objectives.

#### Agency Comments

We provided a draft of this report to DOD for comment. DOD responded that it had no formal comments.

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We are sending copies of this report to the appropriate congressional committees and the Secretary of Defense. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

Should you or your staff have questions concerning this report, please contact me at (202) 512-4841 or at [chaplainc@gao.gov](mailto:chaplainc@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report were David Best, Assistant Director; Andrew Berglund; R. Eli DeVan; Laura Greifner; Jean K. Lee; Jean McSween; Jay Tallon; and Marie Ahearn.

A handwritten signature in black ink, appearing to read 'C. Chaplain', with a stylized, cursive script.

Cristina T. Chaplain  
Director, Acquisition and Sourcing Management

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