

COMBATING NUCLEAR SMUGGLING

Inadequate Communication and Oversight Hampered DHS Efforts to Develop an Advanced Radiography System to Detect Nuclear Materials

Highlights of [GAO-10-1041T](#), a statement for the record to the Committee on Homeland Security and Governmental Affairs, U.S. Senate.

Why GAO Did This Study

The Department of Homeland Security's (DHS) Domestic Nuclear Detection Office (DNDO) is charged with developing and acquiring equipment to detect nuclear and radiological materials to support federal efforts to combat nuclear smuggling. Also within DHS, Customs and Border Protection (CBP) has the lead for operating systems to detect nuclear and radiological materials entering the country at U.S. ports of entry. In 2005, DNDO began working on the cargo advanced automated radiography system (CAARS) intending that it be used by CBP to detect certain nuclear materials in vehicles and containers at U.S. ports of entry. However, in 2007 DNDO decided to cancel the acquisition phase of the program and convert it to a research and development program. GAO was asked to examine events that led to DNDO's decision to cancel the acquisition phase of the program and provide lessons learned from DNDO's experience. This statement is based on prior GAO reports from March 2006 through July 2010 and ongoing work reviewing DHS efforts to develop radiography technology. For ongoing work, GAO reviewed CAARS planning documents and interviewed DHS, DNDO, and CBP officials.

GAO provided a draft of the information in this testimony to DHS and component agencies, which provided technical comments and which were incorporated as appropriate.

View [GAO-10-1041T](#) or [key components](#). For more information, contact Gene Aloise at 202-512-3841 or aloisee@gao.gov.

What GAO Found

From the start of the CAARS program in 2005 until DNDO cancelled the acquisition phase of the program in December 2007, DNDO pursued the acquisition and deployment of CAARS machines without fully understanding that they would not fit within existing primary inspection lanes at CBP ports of entry. This occurred because during the first year or more of the program DNDO and CBP had few discussions about operating requirements at ports of entry. When CBP and DNDO officials met, shortly before DNDO's decision to cancel the acquisition phase of the program, CBP officials said they made it clear to DNDO that they did not want the CAARS machines because they would not fit in primary inspections lanes and would slow down the flow of commerce through these lanes and cause significant delays. Also, the CAARS program was among numerous DHS acquisition programs about which GAO reported in 2008 that appropriate oversight was lacking. Further, the development of the CAARS algorithms (software)—a key part of the machine needed to identify shielded nuclear materials automatically—did not mature at a rapid enough pace to warrant acquisition and deployment. Also, the description of the progress of the CAARS program used to support funding requests in DNDO's budget justifications was misleading because it did not reflect the actual status of the program. For example, the fiscal years 2010 and 2011 DHS budget justifications both cited that an ongoing CAARS testing campaign would lead to a cost-benefit analysis. However, DNDO officials told GAO that when they cancelled the acquisition part of the program in 2007, they also decided not to conduct any associated cost benefit analysis. During recent discussions with DNDO officials, they agreed that the language in the budget justifications lacked clarity, and they have no plans to prepare a cost benefit analysis.

Based on GAO's review of the CAARS program and its prior reports on DHS development and acquisition efforts, GAO identified lessons learned for DHS to consider in its continuing efforts to develop the next generation of radiography imaging technology. For example, GAO previously reported that agencies can enhance coordination by agreeing on roles and responsibilities. In this regard, a draft memorandum of agreement among DHS agencies that intends to clarify roles and responsibilities in developing technologies and help ensure effective coordination has not been finalized. Completing this memorandum could give DHS reasonable assurance that problems associated with the CAARS program do not recur. In discussions with senior officials from DHS, DNDO, CBP and S&T, they all agreed with the need for the memorandum and said that they intend to work toward finalizing the draft memorandum of agreement. Other lessons GAO identified include (1) engage in a robust departmental oversight review process (2) separate the research and development functions from acquisition functions (3) determine the technology readiness levels before moving forward to acquisition, and (4) rigorously test devices using actual agency operational tactics before making decisions on acquisition.