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DRUG CONTROL

Planned Actions Should Clarify Counterdrug Technology Assessment Center's Impact



General Government Division

B-276367

February 3, 1998

The Honorable Charles E. Grassley
Chairman, Caucus on International
Narcotics Control
United States Senate

Dear Mr. Chairman:

The counterdrug technology research and development (R&D) effort is a component of the nation's war on drugs, contributing to the development of technology to reduce both the influx of illicit drugs into the United States and the demand for and use of such drugs. For example, the counterdrug technology R&D effort has been instrumental in the current development of X-ray and gamma-ray technologies designed to help detect drugs hidden in trucks and railroad cars entering the United States along the southwest border.

In fiscal year 1991, Congress established the Counterdrug Technology Assessment Center (CTAC) within the Office of National Drug Control Policy (ONDCP) to serve as the central counterdrug enforcement R&D organization of the federal government. CTAC is expected to oversee and coordinate counterdrug technology initiatives with the related activities of federal departments and agencies, prevent unnecessary duplication of R&D efforts, and fund counterdrug research projects to help fill gaps in the development of technology, whenever possible. CTAC is to use its Science and Technology (S&T) Committee,¹ which is comprised of representatives of involved agencies and bureaus, as the principal mechanism in carrying out these functions.

In view of the importance of the counterdrug technology R&D effort to the war on drugs, you requested that we review the operations and contributions of CTAC. As agreed with your office, we focused on determining (1) how CTAC coordinates its counterdrug R&D efforts with other federal agencies to address counterdrug R&D needs that are not being met by other agencies and to avoid unnecessary duplication and (2) what contributions CTAC has made to counterdrug R&D efforts since its creation.

We did our review primarily in the Washington, D.C., area at CTAC headquarters, and we interviewed officials from 10 of the 21 federal

¹The S&T Committee is comprised of representatives from the R&D offices of the 21 law enforcement and demand reduction agencies and bureaus of the Departments of Justice, Agriculture, the Interior, the Treasury, Defense, Transportation, Energy, State, and Health and Human Services and the Central Intelligence Agency.

agencies on the S&T Committee that accounted for the majority of the overall budget for the National Counterdrug R&D Program. Using a structured questionnaire, we surveyed representatives of the 10 agencies to obtain their views on CTAC's operations and contributions. We also contacted the CTAC technical and contracting agents—the U.S. Army Electronic Proving Ground, Fort Huachuca, AZ, and the Tennessee Valley Authority, Knoxville, TN—to discuss their roles in CTAC's coordination process. In addition, we attended CTAC's regional technology workshop in Atlanta, GA, and conducted structured interviews with officials from several state and local governments that were involved in CTAC-funded counterdrug technology R&D efforts. We performed our work from November 1996 to November 1997 in accordance with generally accepted government auditing standards. A detailed description of our objectives, scope, and methodology is contained in appendix I.

We obtained written comments on a draft of this report from ONDCP. These comments are discussed at the end of this letter and are reprinted in appendix VI.

Results in Brief

CTAC has a coordination process in place for identifying counterdrug technology needs and selecting and funding R&D projects to meet those needs. However, we identified the following shortcomings in CTAC's design and execution of the process.

- According to its charter and CTAC's Chief Scientist, the S&T Committee is to be used as the principal mechanism for assisting CTAC in its coordination of counterdrug R&D efforts, identifying and prioritizing counterdrug technology R&D needs, and evaluating R&D projects for CTAC to fund. However, the S&T Committee's charter, which was created before CTAC existed, does not reflect the Committee's current composition, responsibilities, and relationship to CTAC. Furthermore, CTAC did not regularly and consistently involve the S&T Committee in its coordination process.
- According to CTAC's process for selecting and funding R&D projects, CTAC, in conjunction with the S&T Committee, is to annually reassess, update, and prioritize counterdrug technology and scientific needs. However, CTAC did not regularly evaluate and prioritize the agencies' counterdrug R&D technology needs to ensure that it funded otherwise unfunded projects with the highest priority.
- CTAC's mission includes identifying, defining, and helping to meet the counterdrug technology needs of state and local, as well as federal, law

enforcement agencies. However, CTAC did not systematically identify and consider the counterdrug technology needs of state and local agencies, in conjunction with federal agencies' needs, as part of its regular process for selecting and funding projects. In addition, state and local agencies were only recently represented on the S&T Committee.

- CTAC recommends that agencies provide it with acquisition or transitional plans for each of their projects receiving CTAC funds. These plans are intended to help ensure that any technology that is successfully developed through R&D efforts will eventually be deployed. However, agencies generally did not submit such plans to CTAC.
- As part of its coordination process, CTAC had its technology needs identification and project selection process and other mechanisms in place to help achieve its mission of helping agencies avoid duplicative R&D efforts. CTAC officials were confident that these mechanisms had helped CTAC to avoid duplication. However, although a few agencies cited instances where duplication was avoided as a result of CTAC's efforts, CTAC had not developed any means for determining the extent to which unnecessary duplication had been identified and avoided due to its efforts.

As a result of these shortcomings, neither we nor CTAC could determine the extent to which its coordination process was meeting its mission, that is, identifying counterdrug technology needs and using its available funds to support the highest priority R&D projects that transcend the needs of any single agency and that otherwise might not be funded.

Our task of determining CTAC's contributions to federal drug control efforts was complicated by CTAC's lack of meaningful performance measures to enable it to (1) assess its progress in achieving its mission and contributing to the development and deployment of counterdrug technology and (2) identify and implement any needed improvements to better achieve its mission.

CTAC's Chief Scientist told us that he considered not just technologies that are completed and in use as contributions, but also uncompleted projects that have reached various stages of development. Accordingly, CTAC counted as contributions 36 of the 72 projects it had funded as of April 1997. CTAC also reported as contributions its sponsorship of several outreach efforts, including international symposiums and regional, state, and local workshops, that it indicated facilitated the exchange of information on the status of new technologies.

The contact officials of the lead² R&D agencies identified by CTAC told us that they considered 10 of the 36 projects cited as contributions by CTAC to be actual contributions. The officials used as criteria that the technology resulting from those projects was being used and was assisting their agencies in fulfilling their counterdrug missions. The other 26 projects did not meet these criteria in that they generally either were completed but not used or were not yet ready for use. Also, the S&T Committee members we surveyed agreed with CTAC that its outreach efforts had improved information-sharing among members of the counterdrug R&D community.

In September 1997, ONDCP/CTAC officials told us they were beginning to develop performance indicators as part of ONDCP efforts to develop (1) a performance measurement system for the National Drug Control Strategy and (2) a strategic plan for ONDCP and its components under the Government Performance and Results Act of 1993 (P.L. 103-62), which is commonly referred to as “GPRA” or “the Results Act.”

Background

A 1987 Department of Defense (DOD) Defense Science Board study³ on the detection and neutralization of illegal drugs and terrorist devices, such as explosives, concluded, among other things, that better-focused R&D testing and evaluation and acquisition efforts were needed at the federal level. To address this issue, the study proposed establishing a permanent Research and Technology Group within the National Drug Policy Board, which was the predecessor to ONDCP.

The Anti-Drug Abuse Act of 1988 (P.L. 100-690) created ONDCP to better plan and coordinate federal drug control efforts and assist the federal government in overseeing those efforts. ONDCP is charged with overseeing and coordinating the drug control efforts of over 50 federal agencies and programs, consulting with and assisting state and local governments in their relations with federal agencies involved in the National Drug Control Program, and reviewing and certifying the adequacy of other federal agencies’ drug control-related budget requests.⁴ In February 1990, ONDCP

²According to CTAC, the lead agencies are the principal contacts for the technology R&D projects and those agencies that will ultimately be the principal users of the technology.

³Detection and Naturalization of Illegal Drugs and Terrorist Devices, Defense Science Board, Office of the Secretary of Defense, October 11, 1987.

⁴The Anti-Drug Abuse Act of 1988, as amended, requires the Director of ONDCP to review and certify in writing that annual drug budget submissions from each “program manager, agency head, and department head” with drug control responsibilities are adequate to implement the objectives of the National Drug Control Strategy.

created the S&T Committee to perform functions similar to those previously performed by the Research and Technology Group.

The National Defense Authorization Act for Fiscal Year 1991 (P.L. 101-510), which amended the Anti-Drug Abuse Act of 1988, established CTAC as the central U.S. counterdrug enforcement R&D organization. The act placed CTAC under the operating authority of the Director of ONDCP and required that CTAC be headed by a Chief Scientist of Counterdrug Technology.

Overall, Congress expected CTAC to coordinate the National Counterdrug R&D Program to prevent duplication of efforts and ensure that, whenever possible, those efforts provided capabilities that filled overall existing technology gaps that transcended the needs of any single federal agency and that otherwise might not have been funded. Specifically, CTAC was charged with (1) identifying and defining the short-, medium-, and long-term scientific and technological needs of federal, state, and local drug enforcement agencies;⁵ (2) making a priority ranking of such needs according to fiscal and technological feasibility as part of a National Counterdrug Enforcement R&D Strategy; (3) in consultation with the National Institute on Drug Abuse (NIDA) and through interagency agreements or grants, examining addiction and rehabilitation research and the application of technology to expanding the effectiveness or availability of drug treatment;⁶ (4) overseeing and coordinating counterdrug technology initiatives with the related activities of other federal civilian and military departments; and (5) under the general authority of the ONDCP Director, submitting requests to Congress for the reprogramming or transfer of funds appropriated for counterdrug enforcement R&D.

Similar to its authorizing legislation, CTAC's mission statement sets forth its responsibilities as follows: (1) identify the short-, medium-, and long-term scientific and technological needs of federal, state, and local drug enforcement agencies; (2) develop a national counterdrug R&D strategy that validates technological needs, prioritizes such needs according to technical and fiscal feasibility, and sets forth a plan (including budget) to develop and test the highest priority technology projects; (3) implement a

⁵The National Defense Authorization Act for Fiscal Year 1991 specifies that these needs should include the following categories: (a) advanced surveillance, tracking, and radar imaging; (b) electronic support measures; (c) communications; (d) data fusion, advanced computer systems, and artificial intelligence; and (e) chemical, biological, radiological (including neutron, electron, and graviton), and other means of detection.

⁶This responsibility was added by the Violent Crime Control and Law Enforcement Act of 1994 (P.L. 103-322).

national counterdrug R&D program, including technology development in support of substance abuse, addiction, and rehabilitation research; and (4) coordinate counterdrug R&D activities to identify and remove unnecessary duplication.

To accomplish its mission, CTAC is to (1) annually publish the Counterdrug Research and Development Blueprint Update, which, among other things, lists the scientific and technological needs of federal agencies with counterdrug missions; (2) use the S&T Committee as the principal mechanism for assisting in its coordination of counterdrug technology R&D efforts and for identifying and prioritizing technology needs and selecting otherwise unfunded R&D projects for CTAC funding; and (3) use an outreach program of regional workshops and technology symposiums to facilitate access to federal, state, and local government organizations, industry and academic scientists and engineers, and other targeted community segments.

Federal counterdrug technology R&D spending for fiscal years 1992 (CTAC's first year of operation) through 1997 totaled \$3.2 billion, of which CTAC accounted for \$86.5 million or about 2.7 percent. (See app. II.) According to a CTAC official, for fiscal years 1992 through 1997, CTAC distributed about \$61.0 million, or about 71 percent of its total funds, for 72 counterdrug R&D projects. CTAC also spent \$17.7 million for operational test-and-evaluation efforts and \$4.6 million for technical and contracting agents who are to manage the projects once funded. Table 1 in appendix III shows the distribution of CTAC funding by spending category for fiscal years 1992 through 1997.

In fiscal year 1992, CTAC projects were organized into three technical thrust areas: tactical technologies, nonintrusive inspection, and wide-area surveillance. In fiscal year 1993, the area of demand reduction was added as a fourth technical thrust area.⁷ As shown in table 2 of appendix III, the majority of CTAC's R&D funds for fiscal years 1992 through 1997 were distributed on projects related to the tactical technology thrust area, followed by the demand reduction, nonintrusive inspection, and wide-area surveillance areas.

⁷Tactical technologies are, among other things, developed to support law enforcement personnel in their daily tactical operations against drug trafficking organizations by providing improved communications, tracking and surveillance, and intelligence gathering. Demand reduction technologies are developed to improve instrumentation and equipment available for researchers and develop drugs to combat cocaine addiction. Nonintrusive inspection technologies are aimed at developing a rapid, automatic system to inspect shipment and cargo containers without physically removing all of their contents for manual inspection. Wide-area surveillance technologies are developed to detect and track suspect aircraft, ships, motor vehicles, and persons transporting drugs.

As of September 30, 1997, CTAC's professional staff in Washington, D.C., was comprised of the Chief Scientist, who is the only ONDCP employee; three civilians employed by and detailed from DOD; and three persons employed by and detailed from a Fort Huachuca contractor, which is one of CTAC's technical/contracting agents. Fort Huachuca and the Tennessee Valley Authority, CTAC's other technical/contracting agent, together had two full-time and three part-time employees dedicated to CTAC activities.

According to the Chief Scientist, only he and two of the DOD employees were available to perform management-related functions, such as working and supporting CTAC's interaction with the S&T Committee. The other DOD detailee served as CTAC's budget analyst. The three contractor detailees and the five contracting agent personnel at Fort Huachuca and the Tennessee Valley Authority had specific support functions, such as handling the transfer of funds for CTAC-sponsored technology projects, and were not available to perform management-related functions.

CTAC's Coordination Process Had Several Shortcomings

We identified several shortcomings in the design and execution of the process CTAC established to carry out its coordination of counterdrug R&D efforts as intended. The S&T Committee, whose charter has not been revised since before CTAC was created, does not reflect the committee's current composition, responsibilities, and relationship to CTAC. Moreover, the full S&T Committee met irregularly and often was not included in the decisionmaking about which counterdrug technologies should be funded. Furthermore, CTAC did not regularly reassess the counterdrug technology needs of federal agencies to ensure that its listing was current and reflected the top priority needs of S&T Committee member agencies. Also, CTAC did not systematically consider and fund the counterdrug technology needs of state and local agencies as part of its process for selecting and funding projects, and, until recently, state and local agencies were not represented on the S&T Committee. CTAC also approved many R&D projects for funding even though they lacked comprehensive transitional plans, which are intended to help ensure that developed technologies were eventually put to use. In addition, although several agencies told us of cases in which CTAC efforts had helped them to avoid unnecessary duplicative research, CTAC was unaware of these cases because it had no system in place to determine the extent to which unnecessary duplication was identified and avoided due to CTAC's efforts.

CTAC's Needs Identification and Project Selection Process

Since 1992, CTAC has had a process and procedures in place for coordinating with the R&D community to identify and prioritize R&D needs, avoid unnecessary duplication, and select CTAC-funded R&D projects that, among other things, can help fill overall existing technology gaps and transcend the needs of any single federal agency. CTAC's process included specific steps, criteria, and controls to help ensure that funded projects (1) addressed the needs of the federal law enforcement and demand reduction agencies and (2) provided promising technology that could be used.

According to its charter and CTAC's Chief Scientist, the S&T Committee is to be used as the principal mechanism for assisting CTAC in its coordination of counterdrug technology R&D efforts, identifying and prioritizing R&D needs, and evaluating R&D projects for CTAC to fund. For a detailed description of CTAC's process for identifying and prioritizing technology needs and selecting projects for CTAC funding, including an overview flowchart of the process, see appendix IV.

S&T Committee's Charter Does Not Reflect Its Current Composition and Responsibilities

The composition and responsibilities of the S&T Committee, which was established within ONDCP before CTAC's existence, were set forth in a February 1990 charter. According to the charter, the S&T Committee is to be composed of parallel management-level representatives from federal counterdrug R&D agencies and a representative from the state and local R&D community. The S&T Committee is to be comprised of a 7-member Executive Board, a 16-member committee, and 7 associate committee members. It also is to be organized into several working groups.⁸ The S&T Committee's overall responsibilities are to include identifying, developing, coordinating, and facilitating achievement of the overall goals and objectives of ONDCP's National Drug Control Strategy in the areas of drug control research, automated data processing, and telecommunications.

The charter is intended to establish and clarify the S&T Committee's role and responsibilities in helping ONDCP accomplish its goals and mission. However, the existing charter does not reflect the S&T Committee's current composition. Several of the current members of the S&T Committee—the Department of Justice's (DOJ) National Institute of Justice (NIJ) and NIDA, for example—are not listed as members or listed in their current roles. NIJ is to represent the state and local law enforcement communities, and NIDA is to represent the demand reduction community. Congress has directed

⁸Working groups are comprised of several members of the S&T Committee and are responsible for coordinating agency concerns in specific technical areas and providing updates and reports to the full committee for its consideration.

CTAC to be responsible for addressing the R&D needs of these communities. Also, some of the organizations identified in the charter as members of the S&T Committee are no longer members. In addition, the listing of designated working groups in the charter was not current.

The existing charter also does not address the S&T Committee's current responsibilities and its relationship to CTAC. Because the charter was created before CTAC existed, CTAC is not mentioned in the charter. Yet, the S&T Committee is to be the principal mechanism that CTAC uses to accomplish its responsibilities of overseeing and coordinating counterdrug technology. CTAC focuses its R&D efforts in four areas—tactical technologies, demand reduction, nonintrusive inspection technology, and wide-area surveillance areas. The area of demand reduction is not addressed by the S&T Committee's existing charter, and the demand reduction community's representative, NIDA, only recently began participating on the committee. Also, the charter does not reflect the roles and responsibilities of the S&T Committee and its working groups in developing and monitoring the implementation of the 10-year counterdrug technology development plan and 5-year budget projections.

CTAC Has Not Used the S&T Committee Regularly and Consistently

CTAC has not regularly and consistently involved the full S&T Committee in key decisions relating to its coordination process. The S&T Committee did not meet as regularly as the Chief Scientist intended, and its involvement in CTAC's coordination process varied from year to year and was not always documented. Rather, the Chief Scientist generally consulted with individual S&T Committee members and its working groups. By not involving or dealing with the full S&T Committee, CTAC did not take full advantage of the benefits of the interaction and deliberation among the members on key matters relating to the identification and prioritization of counterdrug technology needs and selection and funding of related R&D projects. As a result, CTAC may be making key funding decisions without the coordinated deliberation and input, as intended, of the full S&T Committee. Thus, neither we nor CTAC could determine the extent to which its process was identifying and funding the otherwise unfunded highest priority technology needs.

According to CTAC's Chief Scientist, the full S&T Committee meets approximately every 4 months to discuss policy issues, technological needs, and opportunities to advance technologies for improving the achievement of counterdrug missions. However, since CTAC's creation, the

s&T Committee met only twice a year in 1992, 1993, and 1995; once a year in 1994 and 1996; and not at all in 1997.

On the basis of our review of s&T Committee minutes from fiscal years 1992 through 1996 and discussions with some committee members, the s&T Committee's involvement in CTAC's coordination process varied from year to year. The s&T Committee performed different tasks each year over the 5-year period we reviewed. For example, the s&T Committee reviewed CTAC's annual draft R&D program plan only once—in fiscal year 1992. The s&T Committee met only once—in fiscal year 1995—to evaluate and prioritize federal agencies' proposals for CTAC funding consideration. The s&T Committee performed a variety of other coordination activities at least once during the 5-year period. These activities included presenting project proposals for possible CTAC funding, evaluating proposals, providing progress reports on CTAC-funded projects, and performing technical reviews.

CTAC's project selection process calls for the preparation of an annual R&D program plan that is based on the agencies' needs and the technical merit and developmental risk of the proposals submitted to meet these needs. According to CTAC's Chief Scientist, the s&T Committee is to assist CTAC by reviewing and updating the needs listing. However, we did not find any documentation showing that the s&T Committee, as a body, was involved in the review and updating of the needs listing in fiscal years 1992 through 1996.

Six of the 11 s&T Committee members we surveyed indicated that the committee provided a valuable and important forum for exchanging information on technology needs. A couple of members of the s&T Committee also said that the committee was more actively involved in the selection of CTAC-funded projects in the earlier CTAC years. One member stated that more frequent meetings of the s&T Committee were needed to foster additional cooperation and coordination among agencies.

In August 1996, the ONDCP Director stated that the s&T Committee and its working groups needed to be revitalized. The Director proposed that the s&T Committee (1) act as a steering body for R&D technology efforts, (2) have senior-level membership to make commitments to R&D policy decisions, and (3) increase the frequency of its meetings to as often as "every three weeks." The Director remarked that it was important for ONDCP/CTAC to obtain feedback from the s&T Committee and its working groups to be able to provide better funding assistance for valid interagency

R&D needs. However, as of November 1997, no significant changes had been made in the s&T Committee and its working groups. Nor, as previously mentioned, had the February 1990 s&T Committee charter been updated since CTAC's creation to reflect changes in the committee's composition, roles, and expanded mission and to address the committee's proposed revitalization.

The Chief Scientist told us that the full s&T Committee did not meet between August 1996 and August 1997. However, he said that, between December 1996 and August 1997, he met 10 times with members of the Technology Coordination Working Group, which is an s&T Committee working group comprised of key agency representatives. According to the Chief Scientist, the purpose of the meetings was, among other things, to develop a 10-year counterdrug technology development plan with 5-year budget projections in support of ONDCP's 10-year National Drug Control Strategy. The 10-year technology development plan is expected to provide a road map for developing counterdrug technologies and upgrading existing agency systems.⁹ However, at the time of our review, the working group had not completed the plan and budget. Also, it was not clear what role the full s&T Committee, as the principal coordinating mechanism, would play in helping to monitor, implement, and adjust the 10-year plan and 5-year budget from year to year.

Counterdrug Technology Needs Were Not Regularly Reassessed and Updated

According to CTAC's process for selecting and funding counterdrug technology R&D projects, the full s&T Committee is to annually reassess, update, and prioritize counterdrug technology and scientific needs to help ensure that the projects selected and funded are linked to currently identified priority needs among all relevant agencies. However, CTAC's Chief Scientist, as well as some of the s&T Committee members, acknowledged that the latest counterdrug technology needs listing had not been recently reassessed and was not always updated annually. Furthermore, although CTAC had developed what it termed as priority listings of counterdrug R&D technology needs, there were far more items on these lists than could be funded, and no attempt had been made to rank the listed needs by their relative importance to agency end users. As a result, there is no way for CTAC to ensure that the projects it funds reflect the most current and highest priority of the otherwise unfunded

⁹For further discussion of the long-range technology plan, particularly with regard to narcotics detection technologies, see *Terrorism and Drug Trafficking: Responsibilities for Developing Explosives and Narcotics Detection Technologies* (GAO/NSIAD-97-95, Apr. 15, 1997) and *Drug Trafficking: Responsibilities for Developing Narcotics Detection Technologies* (GAO/T-NSIAD-97-192, June 25, 1997).

counterdrug R&D technology needs of the law enforcement and demand reduction communities. In this regard, 8 of the 10 s&T Committee members we surveyed believed that their agencies' counterdrug technology needs were not adequately reflected in the CTAC-funded projects.

A listing of priority law enforcement-related counterdrug technology needs was included in CTAC's first Blueprint Update in August 1992.¹⁰ In May 1993, DOD conducted a 2-day workshop with the s&T Committee members and CTAC officials to revisit the s&T needs of the counterdrug enforcement agencies. The workshop attendees produced an Investment Strategy for DOD Counterdrug s&T Programs. The s&T needs from that effort were added by CTAC to the counterdrug technology needs listing and updated with agency inputs for fiscal year 1994. The needs listing and updated data were included in CTAC's 1995 Blueprint Update. Since then, CTAC has not substantially changed the counterdrug technology needs listing.

s&T Committee members told us that the latest counterdrug technology needs listing did not reflect contemporary agency needs. For example, in a July 1997 memorandum on the subject, an official of one federal law enforcement agency represented on the s&T Committee stated that, although some of the listed technological needs might still be current, the list did not represent current law enforcement needs from his agency's perspective.

CTAC officials told us that they annually requested written updates to the needs listing, but they did not receive responses from most agencies. CTAC said it received responses from 9 of 21 agencies for fiscal year 1995, no agency responses for 1996, and responses from 2 agencies for 1998. For fiscal year 1997, according to a CTAC official, CTAC did not request an update to the s&T Committee needs listing. However, the Chief Scientist said CTAC did not follow up with the agencies to obtain their input or to determine why they did not respond and whether they had any additions or changes. Moreover, CTAC had not used the s&T Committee as a forum to obtain all input and reassess the list to ensure that it reflected the member agencies' current counterdrug technology requirements. The Chief Scientist told us that he planned to follow up on the agency needs update at the next s&T Committee meeting, which was scheduled to be held in February 1998.

¹⁰A Counterdrug Enforcement Research and Development Blueprint, The Counterdrug Technology Assessment Center, Office of National Drug Control Policy, August 7, 1992.

Regarding demand reduction technology needs, although legislation added the demand reduction area to CTAC's statutory responsibilities in 1993, CTAC did not begin developing a related needs listing until June 1997. CTAC delayed developing the list even though it had invested over \$19 million in such technology research as of September 1997. Moreover, according to the Chief Scientist, NIDA, which represents the demand reduction community, was not represented on the S&T Committee until December 1996 when its representative began attending meetings of the previously mentioned Technology Coordination Working Group.¹¹

**State and Local Needs
Were Not Systematically
Identified and Considered**

CTAC's mission includes identifying, defining, and helping to meet the counterdrug technology needs of state and local, as well as federal, law enforcement agencies. But, although CTAC funded some state and local projects, it made no attempt to systematically identify the needs of state and local law enforcement agencies. According to CTAC's Chief Scientist, CTAC operated on the assumption that state and local counterdrug R&D needs were the same as those of federal agencies; therefore, CTAC focused its process on federal agencies. In addition, CTAC did not consider the counterdrug technology needs of state and local law enforcement agencies as part of its formal process for selecting and funding projects. As a result, state and local projects were selected for funding independently of the process; some of these projects might not have been selected had they been considered in conjunction with federal needs.

The Chief Scientist told us that NIJ was CTAC's link to the state and local law enforcement community. According to an NIJ official, NIJ's Office of Science and Technology¹² is to work closely with state and local agencies to identify their overall law enforcement R&D technology needs, including their counterdrug needs. However, according to NIJ's Director of Science and Technology, CTAC was not responsive to state and local counterdrug technology project proposals and concerns raised by NIJ. Like NIDA, NIJ only

¹¹According to CTAC's Chief Scientist, NIDA was added as a member of the S&T Committee some time before December 1996 to represent the demand reduction community. However, the NIDA representative stated that NIDA was not aware that it was a member of the S&T Committee until about the time it began attending committee working group meetings. In August 1997, the Chief Scientist confirmed that NIDA had not been formally invited in writing to become a representative, nor was the committee charter adjusted accordingly. He stated that he planned to send a formal letter to the Department of Health and Human Services requesting that NIDA be represented at the S&T Committee meetings.

¹²The Office of Science and Technology's mission, among other things, is to provide state and local law enforcement and corrections agencies with access to the best technologies and help them develop capabilities that are essential to the improvement of efficiency and effectiveness in the criminal justice system.

became a representative on the S&T Committee in December 1996.¹³ The Director of Science and Technology did not agree with CTAC's assumption that state and local needs were the same as those of federal agencies. Moreover, the President of the International Association of Chiefs of Police (IACP) stated in his July 1997 monthly address to association members¹⁴ that state and local law enforcement practitioners needed to get more involved in the creation, advancement, and development of technology to ensure that their needs are communicated and met.

As of October 1997, CTAC was funding six state and local law enforcement projects. Total CTAC funding for these projects was about \$14.6 million, or about 24.0 percent of the funds CTAC distributed for R&D projects from fiscal years 1992 to 1997. However, these projects were not selected as part of CTAC's regular process for selecting and funding counterdrug projects, which as previously discussed focused on federal agencies' technology needs. Rather, these projects were selected outside of the process through more ad hoc means. Thus, CTAC had no systematic way of ensuring that projects selected and funded with available CTAC resources had the highest priority among state and local, as well as federal, agencies. For example, one state project receiving funding was initiated as a result of a contact at a federal agency; another project receiving funding was initiated as a result of contacts made at a law enforcement conference. In addition, by selecting projects outside of the formal process, CTAC has no assurance that they, to the extent possible, meet the needs of multiple local, state, and federal agencies. For example, a state and local project leader told us that two of the six CTAC-funded state and local projects were so specialized that they could not be transferred easily to other jurisdictions.

According to the Chief Scientist, CTAC communicated and interacted with state and local law enforcement and demand reduction agencies primarily through regional workshops held principally to share counterdrug technologies in the test and pilot stages. According to the CTAC contractor responsible for managing the workshops, these workshops apparently increased state and local agencies' awareness of CTAC and its mission. In this regard, over 90 percent of the state and local agencies participating in

¹³According to CTAC's Chief Scientist, NIJ was added as a member of the S&T Committee some time before December 1996 to represent the state and local law enforcement communities. However, the NIJ representative stated that NIJ was not aware that it was a member of the S&T Committee until about the time that it began attending S&T working group meetings. In August 1997, the Chief Scientist confirmed that NIJ had not formally been invited in writing to become a representative, and that the S&T Committee charter had not been adjusted accordingly. The Chief Scientist stated that he planned to send a formal letter to DOJ requesting that NIJ be represented.

¹⁴The IACP President's monthly address was published in the July 1997 issue of the IACP's magazine, The Police Chief.

CTAC's law enforcement counterdrug technology workshops said that they were not aware of CTAC before receiving notice of the workshops. However, the workshops were generally not used to identify state and local counterdrug technology needs.

A CTAC official told us that CTAC representatives attended annual meetings of the IACP, National Sheriffs Association (NSA), and Police Executive Research Forum and participated in NJ's technology committee to help identify the needs of the state and local organizations. However, we found no evidence of how information gathered at these meetings was incorporated into CTAC's needs identification process.

The Chief Scientist acknowledged that, although CTAC is tasked with identifying state and local technology needs, it had not formally addressed these needs as it had federal needs. He stated that, in anticipation of receiving additional funds in fiscal year 1998 specifically to transfer technologies to state and local law enforcement agencies,¹⁵ CTAC was planning to form a committee comprised of representatives from various pertinent organizations, including NJ, NSA, and IACP, to assess and identify the technologies to be transferred and the recipient locations. According to the Chief Scientist, this committee would be used to assist CTAC in identifying state and local counterdrug technology needs as well as the technologies ready for transfer.

Comprehensive Transitional Plans Were Not Provided

In its report accompanying ONDCP's fiscal year 1993 appropriations bill, the House Appropriations Committee stated that before CTAC committed funds to a R&D project, it should have a written commitment from the client agency. This commitment was to specify that funds to purchase the technology, once successfully developed, would be included in future budget requests. Consequently, CTAC recommends that agencies provide CTAC with acquisition or transitional plans for each of their projects receiving CTAC funds. These plans are intended to increase the likelihood that any technology that is successfully developed through R&D efforts will eventually be used.

However, most R&D projects that CTAC approved for funding did not have transitional plans, as recommended. A CTAC official told us that, in many instances, CTAC used verbal, good faith agreements with agency representatives, and that such agreements were not documented. From its

¹⁵The Treasury and General Government Appropriations Act, 1998, appropriated \$13 million to CTAC to initiate a pilot Counterdrug Technology Transfer Program for transferring technology directly to state and local law enforcement agencies.

establishment through April 1997, CTAC funded 72 projects. However, although we found brief references to transition or acquisition in several project proposals, only seven funded projects included transitional plans for deploying the technology under development. CTAC's Chief Scientist told us that CTAC would like to receive more transitional plans from the agencies. However, other than a reference in the 1992 Blueprint Update to the lack of transitional plans, CTAC did not attempt to follow up on its recommendation that agencies provide transitional plans. Nor did CTAC raise this issue with the S&T Committee.

Extent of Duplication Avoided Was Unknown

As reflected in its mission statement, one of CTAC's objectives is to prevent duplication of counterdrug R&D efforts. According to CTAC officials, they look for unnecessary duplication in federal counterdrug R&D projects as part of the process for identifying counterdrug R&D needs and requirements and for selecting projects. A CTAC official also indicated that CTAC checks for duplication as part of its role in ONDCP's drug budget certification process.¹⁶ CTAC also includes a listing of those projects comprising the National Counterdrug R&D Program in its Blueprint Update. In addition, according to CTAC officials, the S&T Committee meetings and the CTAC-sponsored symposiums, among other things, enable stakeholders to identify and avoid unnecessary, duplicative R&D efforts.

CTAC officials were confident that the mechanisms they had in place helped avoid unnecessary duplication. However, they told us that they had not identified any specific examples of potentially duplicative counterdrug R&D projects that had been avoided due to CTAC's efforts. The officials said they did not systematically attempt to identify or obtain feedback from participating agencies on incidents of duplication that had been avoided due to CTAC. Without a measure of outcome, CTAC has no assurance of how well it is carrying out and achieving this mission. As discussed later in this report, outcome measures are required by GPRA as part of future performance measurement tasks.

Some of the S&T Committee members we interviewed told us that their agencies were generally able to avoid duplicative research projects because they learned of each other's plans as a result of CTAC's efforts. Moreover, in a computer listing of ongoing National Counterdrug R&D Program projects distributed by CTAC for updating, one agency identified two projects being done by other agencies that would meet its needs; therefore, it dropped its plans to submit proposals for similar projects.

¹⁶See footnote 4.

Also, 3 of the 10 s&t Committee representatives we surveyed responded that they were aware of potentially duplicative efforts that CTAC had helped them to avoid. For example, one agency representative noted that CTAC's efforts helped avoid duplication in the demand reduction and nonintrusive inspection technology R&D areas. Another agency noted that the CTAC-sponsored Facial Recognition Working Group of the s&t Committee joined together all of the federal sponsors of and major customers for facial recognition R&D, thereby avoiding duplicative R&D efforts.

CTAC Made Some Positive Contributions to Federal Counterdrug Technology R&D Efforts but Had Not Developed Meaningful Performance Measures

CTAC officials cited numerous contributions or accomplishments relating both to 36 of the 72 R&D projects it funded and to the outreach efforts CTAC has sponsored since it was established. However, agency contact persons for individual CTAC-funded projects defined contributions differently, citing only those 10 projects (of the 36 projects identified by CTAC) that had actually resulted in usable technologies that were assisting agencies. Agency officials agreed that the outreach efforts cited by CTAC helped to enhance the exchange of information as well as avoid duplication. However, our task of determining CTAC's contributions to federal drug control efforts was complicated because CTAC has no meaningful performance measures to enable it to (1) assess the extent to which it is achieving its mission and contributing to the development and deployment of counterdrug technology and (2) identify and implement any needed improvements to better achieve its mission.

CTAC Cited Projects and Outreach Efforts as Contributions

From 1992 until April 10, 1997, CTAC funded 72 projects. According to CTAC's Chief Scientist, a project was considered a contribution or accomplishment if any one of the following occurred: (1) a technology was developed and in use, (2) a phase of a project was completed, (3) a prototype was developed, (4) results of testing were completed, or (5) "substantial progress" in an area was achieved.¹⁷ In response to our request, the Chief Scientist developed and provided us with a list of 36 counterdrug projects that they considered to be contributions. Some of these projects are highlighted in CTAC's annual R&D Blueprint Update, which includes a listing of CTAC's major accomplishments.

¹⁷According to a CTAC official, "substantial progress" means providing additional capability or achieving satisfactory results. The official cited the CTAC-sponsored Cocaine Catalytic Antibodies project and Drug Evaluation Network System project as examples. Researchers working on these projects described them as follows: The Cocaine Catalytic Antibodies project was designed to prevent (1) fatal overdoses of cocaine and (2) symptoms produced by nonfatal overdoses. Progress was made in the testing of mice. The Drug Evaluation Network System project's ultimate goal was to evaluate the various alternative treatments to cocaine addiction. This project had established an information link among 20 drug programs in 5 cities.

CTAC also considered its outreach efforts to be contributions. The outreach program was developed to bring together major stakeholders involved in counterdrug efforts to exchange information on technology. According to a CTAC official, CTAC's outreach efforts, from its inception through August 1997, included four international symposiums, one drug abuse treatment technology workshop, and six 1-day technology workshops designed to address user needs and technological opportunities.

Views on CTAC's Contributions Differ

Because agencies are the ultimate customers of counterdrug technology, we contacted the CTAC-identified contact persons from the lead agencies for each of the 36 projects that CTAC considered to be contributions to obtain their views on the contributions. In summary, these agency officials considered 10 of the 36 projects to be contributions because they had different criteria than CTAC for considering a project a contribution. Their criteria were that the technology resulting from those projects (1) had been successfully used and (2) was assisting their agencies in fulfilling their counterdrug missions. These 10 projects are described in appendix V.

The remaining 26 projects did not meet these criteria in that they generally either were completed and not implemented or were still in progress. Specifically, 12 of these projects were categorized as completed, but they were not in use for a variety of reasons (e.g., the technology was not user friendly, was too expensive to use, had operational problems, or needed further development). For example, a project pertaining to narcotics detection in mail packages fell into this category because, although a prototype had been developed, the technology did not effectively detect cocaine. We were told by the agency contact persons that 11 of the 26 other projects were currently in development. For example, a transportable observation platform designed to provide long-range observation capability was still undergoing tests and evaluation. Finally, for the remaining three projects, the designated contact persons were not aware of the status of the projects and thus could not comment on whether they considered them to be contributions.

The majority of the S&T Committee members we surveyed commented that CTAC's unique contribution to the counterdrug effort is that it provides a forum for interagency exchange of information. For example, respondents noted that S&T Committee meetings held to present project proposals facilitated professional communication among agency representatives. They noted that these meetings gave R&D agency representatives an opportunity to informally discuss current research and thereby identify

technology gaps and to learn about technology acquisition on non-CTAC-funded projects.

Another aspect of CTAC's coordination function and outreach efforts is CTAC-sponsored symposiums that bring together scientific and technical experts from academia, private industry, and government agencies. One S&T Committee member that we surveyed reported that his agency was able to bring together at a CTAC symposium all of the federal sponsors and most of the major customers of a new technology in the area of wide-area surveillance. Also, 97 percent of the state and local law enforcement participants who completed exit evaluations at the six 1-day workshops held to date reported that they found the workshops helpful.

In addition, we surveyed S&T Committee members to obtain their overall views on CTAC's contributions, particularly regarding to its coordination of federal counterdrug technology R&D efforts and its support of ONDCP's National Drug Control Strategy. When asked to determine, from their agencies' perspectives, how effective or ineffective CTAC has been in coordinating and overseeing federal counterdrug technology R&D activities, representatives from the 10 agencies we surveyed provided mixed responses. Six of the 10 agency respondents stated that CTAC was "sometimes effective, sometimes ineffective," with 2 agency respondents stating that CTAC was "generally effective," and 2 responding "generally ineffective." One of the six respondents explained that CTAC was "somewhat effective" when focusing its efforts on the R&D technology that was needed and not being pursued by other agencies, but was "less effective" in areas where agencies had different technology requirements or needs. Another of the six respondents explained that CTAC had been "generally effective" in its function of coordinating the federal counterdrug technology R&D effort, but had been "generally ineffective" in developing technology to meet needs.

When asked to determine, from their agencies' perspectives, to what extent CTAC's involvement has had a positive effect on federal counterdrug technology R&D efforts that support the goals of the National Drug Control Strategy, the representatives' responses ranged from CTAC's having a "moderate" effect to having "little or no" effect. For example, one respondent noted that before fiscal year 1997, CTAC had focused more on individual agencies' technology needs than on technology that specifically supported the overall National Strategy.

Meaningful Performance Measures Were Lacking

Determining CTAC's progress in achieving its mission and its contributions to the development and deployment of counterdrug technology was complicated by CTAC's lack of meaningful performance indicators or measures. Although CTAC has a specific mission and responsibilities, according to ONDCP and CTAC officials, it had not developed indicators to measure its progress in achieving its mission, that is, the outcome of its efforts.

Although scientific research is often considered to be intrinsically valuable to society, there is pressure on all federal agencies, including s&T agencies, to demonstrate that they are making effective use of taxpayers' dollars. This emphasis is evident in the passage of GPRA. In response to questions about the value and effectiveness of federal programs, the Act seeks to shift federal agencies' focus away from traditional concerns, such as staffing, activity levels, and tasks completed, toward a focus on program outcomes—that is, the real difference a federal program makes in people's lives. Within the context of the Act, an “outcome measure” assesses the results of a program activity compared to its intended purpose, while an “output measure” tabulates, calculates, or records the level of activity or effort and can be expressed in a quantitative or qualitative manner.

Since CTAC had no formal performance measures, we relied on general criteria provided by the Chief Scientist, as well as our survey results and subsequent discussions with s&T Committee members, to learn about CTAC's contributions. As previously discussed, we found a lack of agreement between CTAC and s&T Committee members regarding the criteria for CTAC project-related contributions.

When we examined the contributions identified by CTAC, we found that they were more output-related than outcome-related. That is, CTAC focused more on quantifying specific activities and products than on assessing their effectiveness or impact on law enforcement and demand reduction counterdrug efforts. For example, CTAC generally considered completed projects (output) successful whether or not they resulted in the deployment of useful technology by law enforcement or demand reduction agencies. In addition, our review did not find that CTAC obtained periodic feedback from law enforcement or demand reduction agencies on the extent to which the technology resulting from CTAC-funded projects was useful in helping to reduce drug supply or the demand for drugs (outcome). Also, CTAC cited the number of symposiums and workshops it sponsored (output) but did not specifically measure the outcome of those

forums in terms of, for example, the unnecessary duplicative R&D avoided and the technology developed and used (outcome).

In addition, CTAC is responsible for coordinating counterdrug R&D activities to ensure that unnecessary duplication is avoided and that it supports otherwise unfunded projects with the highest priority. However, we found no indication that CTAC had developed a means for measuring the results and effectiveness of its coordination (outcome), such as obtaining feedback from the agencies with R&D missions whose activities it is charged with coordinating. Nor, as we previously discussed, has CTAC developed a means for measuring its effectiveness in identifying and avoiding unnecessary duplicative R&D efforts.

Without measurable outcome indicators linked to its mission and identifiable goals and objectives, CTAC and others cannot reliably determine CTAC's impact on reducing the nation's drug problems through the development and deployment of useful counterdrug technologies.

In September 1997, ONDCP and CTAC officials informed us that they were taking steps as part of two separate, but related, initiatives to develop long-term strategic goals. First, pursuant to statutory provisions requiring the development and submission of the National Drug Control Strategy, ONDCP has been developing a performance measurement system for the National Strategy. As part of this effort, CTAC officials said that CTAC and other federal R&D agencies have been developing performance targets and corresponding measures or indicators for each of the technology-related objectives for the National Strategy's goals. However, these indicators are intended to measure the administration's overall progress in achieving the national goals and objectives, which involves the input and efforts of various agencies, and not to measure CTAC's execution of its mission or its specific achievements and contributions.

Secondly, pursuant to GPRA, ONDCP is developing a separate strategic plan with objectives, targets, and performance indicators specific to the operations of ONDCP and its components. ONDCP officials told us that in response to the Office of Management and Budget's (OMB) comments on a draft of the plan, they and CTAC officials were developing specific objectives, targets, and performance indicators for CTAC that would be included in the strategic plan. They stated that these indicators or measures would be primarily output-oriented (e.g., number of projects funded, reports generated, or symposiums sponsored). They also stated

that they planned to work with CTAC in developing outcome measures for CTAC later, although they did not provide a specific time frame.

Conclusions

CTAC has in place a coordination process for identifying counterdrug technology needs and selecting and funding R&D projects to meet those needs. However, we found that CTAC's design and execution of the process did not allow CTAC or us to determine the extent to which its process was identifying and funding the otherwise unfunded highest priority technology needs. The primary reason for this situation appears to be a lack of regular communication between CTAC and counterdrug R&D agencies through the S&T Committee, which is their representative body. S&T Committee meetings have been infrequent, and the committee has not been used regularly and consistently in helping to make key decisions, such as which projects CTAC should fund with its limited available funds. According to S&T Committee members, when the committee has met more frequently, it was effective in enabling members to exchange information, avoid duplication, and foster better cooperation and coordination. By dealing with individual S&T Committee members or working groups, CTAC may not be taking full advantage of the interaction and deliberations among the members on decisions and advisory matters as intended. As a result, CTAC may not be funding the most critically needed counterdrug technologies.

Moreover, the charter for the S&T Committee has not been revised to reflect changes in the committee's composition, responsibilities, and relationship to CTAC since 1990, which was before CTAC was established. Because of the changes in the S&T Committee's membership since the charter was originally written, it is important that the document be updated as needed.

In addition, federal R&D agencies' counterdrug needs have not been regularly reassessed and updated; state and local technology needs, although funded in some cases, have not been systematically considered, along with federal needs, as part of CTAC's needs identification and project selection process; and agencies have often failed to include the transitional plans needed to help ensure that technologies successfully developed with CTAC funds are used. Also, while CTAC has established mechanisms to avoid duplicative R&D efforts, it has not gathered the necessary feedback from its constituent agencies to determine whether these mechanisms are working. Therefore, CTAC does not know to what

extent it is fulfilling its mission objectives of helping the counterdrug R&D community to identify and avoid duplication.

Recent efforts by CTAC and the S&T Committee's Technology Coordination Working Group to develop a 10-year counterdrug technology development plan with 5-year budget projections in support of ONDCP's 10-year National Drug Control Strategy are positive steps toward defining and addressing our nation's counterdrug technology needs. These efforts also are good examples of how CTAC could more effectively communicate and coordinate with the counterdrug technology R&D community in accomplishing its mission. However, CTAC may not be able to effectively implement and adjust as necessary the National Drug Control Strategy and the technology development plan from year to year, because of the shortcomings we found in its coordination process for annually identifying, selecting, and funding R&D projects to meet identified technology needs and gaps.

CTAC has made some identifiable contributions to needed counterdrug technology development. However, the extent to which CTAC has achieved its mission of helping to develop and deploy needed counterdrug technology is unclear because it has not yet developed meaningful, measurable performance goals and outcome indicators. This situation is reflected in the varying perspectives on CTAC's contributions to counterdrug technology efforts held by CTAC and the other agencies involved in those efforts. Although both CTAC and the S&T Committee members we surveyed agreed that CTAC's outreach efforts had improved information-sharing among members of the counterdrug R&D community, many of the R&D projects that CTAC cited as contributions were not considered as such by the agencies that will ultimately use the technologies. One reason for this difference of opinion appears to be that, while CTAC counted the attainment of certain milestones in the development process as contributions, the lead agencies were interested primarily in implementing efficient and effective counterdrug technologies in the field.

Until CTAC and the agencies it assists—its customers and stakeholders—concur in how CTAC's contributions to the development and deployment of counterdrug technology should be measured, it will be difficult to determine the extent to which CTAC is achieving its mission. ONDCP/CTAC has an opportunity to address this situation by coordinating closely with its key customers and stakeholders as it develops specific goals and performance measures under GPRA. However, CTAC is currently developing output measures, rather than the outcome measures that are

necessary to determine with any precision the extent to which CTAC is achieving the purpose for which it was created.

Recommendations

For CTAC to more effectively coordinate with federal, state, and local counterdrug R&D agencies in identifying and prioritizing technology needs and selecting projects for CTAC funding, we recommend that the Director, ONDCP, direct the Chief Scientist to work with the S&T Committee to help ensure that:

- The S&T Committee meets regularly to exchange information on federal, state, and local drug supply and demand reduction technology needs; obtain, assess, and prioritize R&D needs; and recommend to the Chief Scientist selection and funding of the otherwise unfunded highest priority projects. In this regard, the S&T Committee's charter should be updated to reflect the committee's current composition, responsibilities, and relationship to CTAC.
- Projects selected for CTAC funding have transitional/acquisition plans.

Furthermore, to help ensure that CTAC can adequately measure whether it is achieving its mission, we recommend that the Director, ONDCP, direct the Chief Scientist to develop, within a set period, performance objectives and outcome measures that make it possible to assess the extent to which CTAC is achieving its various mission objectives and contributing to the development and deployment of counterdrug technologies.

Agency Comments and Our Evaluation

ONDCP provided comments on a draft of this report, and its comments are reprinted in appendix VI. Overall, ONDCP generally agreed with our findings and conclusions and is taking action on all of our recommendations.

Regarding our first recommendation, ONDCP stated in its written comments that it had directed CTAC to revise the S&T Committee's 1990 charter. Other than changes in the composition of the committee, ONDCP did not specify how the charter would be revised. However, if implemented as set forth in our recommendation, revising the charter should help ensure that all parties understand their roles, responsibilities, and expectations.

However, ONDCP indicated in its written comments that the membership of the S&T Committee would include officials of the President's Cabinet with drug control responsibilities. An ONDCP official subsequently informed us that ONDCP expects that "principal deputy secretaries" of the various

agencies will sit as members of the committee. This would represent a change from the current membership, which includes officials at the working levels, with knowledge of their agencies' counterdrug technology R&D activities. However, according to the Chief Scientist, the working-level officials currently on the S&T Committee would continue to serve on the committee's Technology Coordination Working Group, which he chairs and which would serve as CTAC's principal mechanism for coordinating counterdrug R&D efforts, identifying and prioritizing technology needs, and selecting otherwise unfunded R&D projects for CTAC funding. The Working Group would then advise the S&T Committee, which would serve as the steering and policymaking body for counterdrug technology R&D efforts.

Regarding our second recommendation, ONDCP stated that it had directed CTAC to use the annual budget recertification process to ensure that the lead agencies for CTAC-sponsored projects involving the delivery of prototype systems have written acquisition or transitional plans. This action, if properly implemented, should fulfill the intent of our recommendation.

Regarding our third recommendation, ONDCP expressed the intention to verify CTAC's performance by measuring the contributions of CTAC-sponsored counterdrug technologies to the efficiency and effectiveness of user agencies within the framework of ONDCP's national drug control goals and objectives. To track and measure CTAC's performance, ONDCP proposes to use the strategic plan, annual plan, and annual performance report required under GPRA. Depending on the types of indicators that ONDCP and CTAC develop to measure CTAC's performance and contributions, these proposed actions could go a long way toward helping to clarify CTAC's impact on the development and deployment of counterdrug technology.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies of the report to the Ranking Minority Member of the Senate Caucus on International Narcotics Control, the appropriate congressional committees, the Director of ONDCP, CTAC's Chief Scientist, the heads of agencies represented on the S&T Committee, the Director of OMB, and other interested parties. Also, copies will be made available to others upon request.

The major contributors to this report are listed in appendix VII. If you have any questions about this report, please call me on (202) 512-8777.

Sincerely yours,

A handwritten signature in black ink that reads "Norman Rabkin". The signature is written in a cursive, flowing style.

Norman J. Rabkin
Director, Administration
of Justice Issues

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Abbreviations

BAA	Broad Agency Announcement
CTAC	Counterdrug Technology Assessment Center
DOD	Department of Defense
DOJ	Department of Justice
DEA	Drug Enforcement Administration
FBI	Federal Bureau of Investigation
FinCen	Financial Crime Enforcement Network
GPRA	Government Performance and Results Act of 1993
IACP	International Association of Chiefs of Police
INS	Immigration and Naturalization Service
NIDA	National Institute on Drug Abuse
NIJ	National Institute of Justice
NSA	National Sheriffs Association
OMB	Office of Management and Budget
ONDCP	Office of National Drug Control Policy
R&D	research and development
S&T	science and technology

Objectives, Scope, and Methodology

In response to the request of the Chairman of the Senate Caucus on International Narcotics Control that we review the operations and contributions of the Counterdrug Technology Assessment Center (CTAC), our objectives were to determine (1) how CTAC coordinates its counterdrug research and development (R&D) efforts with other federal agencies to address counterdrug R&D needs that are not being met by other agencies and to avoid unnecessary duplication and (2) what contributions CTAC has made to counterdrug R&D efforts since its creation.

Our work covered CTAC operations and contributions during fiscal years 1992 through 1997. We conducted our review primarily in the Washington, D.C., area at the headquarters of the Office of National Drug Control Policy (ONDCP)/CTAC. We interviewed officials from CTAC, the Office of Management and Budget (OMB), and the following key federal law enforcement and other agencies involved in the National Counterdrug R&D program: the U.S. Customs Service, Drug Enforcement Administration (DEA), Department of Defense (DOD), U.S. Coast Guard, Federal Bureau of Investigation (FBI), National Institute of Justice (NIJ), Immigration and Naturalization Service (INS), and National Institute for Drug Abuse (NIDA). We contacted CTAC's technical and contracting agencies—the U.S. Army Electronic Proving Ground in Fort Huachuca, AZ, and the Tennessee Valley Authority in Knoxville, TN, to discuss and obtain documentation of CTAC's project selection process. Furthermore, on the basis of usage of CTAC-sponsored technology, we judgmentally selected and contacted two Customs Service field offices.

To address both of our objectives, we used a structured questionnaire to survey representatives of 10 of the 21 federal agencies on the S&T Committee. We judgmentally selected the 10 agencies on the basis of preliminary discussions with ONDCP, CTAC, and several federal agencies involved in counterdrug technology R&D activities. The 10 agencies varied in size and level of funding, but accounted for the majority of the overall budget for the National Counterdrug R&D Program from fiscal years 1992 through 1997. In addition to size and level of funding, we considered such factors as the agencies' functions (drug supply and demand reduction) and their extent and length of involvement in R&D activities. We surveyed the agencies during March and April, 1997.

Using this questionnaire, we asked officials their views about (1) how well CTAC communicated various kinds of information to agency users of counterdrug technology, (2) how effective CTAC was in overseeing and coordinating federal counterdrug technology R&D activities and in avoiding

duplication and filling technology gaps, and (3) to what extent CTAC's involvement has had a positive effect on federal counterdrug technology R&D efforts that support the goals of the National Drug Control Strategy. We also asked officials their views about (1) CTAC's general and specific contributions to federal counterdrug technology R&D efforts and (2) the extent to which specific technologies developed and tested with CTAC funds had been fielded and used.

Also, using a similarly structured questionnaire, we judgmentally selected and interviewed nine state and local administrators by telephone or in person at CTAC's regional workshop in Atlanta, GA. We also analyzed evaluation forms that had been completed by attendees at all six regional workshops sponsored by CTAC.

To address the first objective, we also analyzed (1) CTAC's and key law enforcement's and other agencies' involvement in counterdrug technology R&D efforts for fiscal years 1992 through 1997, ONDCP's National Drug Control Strategies, CTAC's corresponding annual Counterdrug Research and Development Blueprint Update reports, minutes of Science and Technology (S&T) Committee and working group meetings, and pertinent memorandums and other documents; (2) CTAC's policies, procedures, and processes for identifying R&D needs, and prioritizing, selecting, and funding R&D projects; (3) CTAC communication of guidance and project-related information to counterdrug technology R&D and user agencies; (4) for fiscal years 1992 through 1997, funding appropriated to and allocated by CTAC for the National Counterdrug R&D Program; and (5) CTAC's legislative history. We did not verify the validity of data provided by CTAC.

To address the second objective, we also reviewed documentation to identify and analyze contributions or accomplishments cited by CTAC. CTAC provided us with a list of contributions and R&D agencies' contact officials in the appropriate federal agencies. We discussed with these officials their views on the contributions and the status of the related projects.

Federal Counterdrug Research and Development Spending, FY 1992-97

(Dollars in millions)

Federal agency	1992	1993	1994	1995	1996	1997^a request	Total
Agriculture Research Service	\$6.5	\$6.5	\$6.5	\$6.5	\$4.2	\$4.7	\$34.9
U.S. Forest Service	0.5	0.5	0.5	0.1	0.1	0.1	1.8
Department of Defense	91.6	34.1	44.7	54.0	51.4	29.4	305.2
Bureau of Indian Affairs	0.0	0.0	1.0	0.9	0.5	0.5	2.9
Drug Enforcement Administration	0.0	0.0	2.4	2.3	2.7	3.2	10.6
Federal Bureau of Investigation	3.8	6.8	2.8	4.5	12.9	12.9	43.7
Federal Aviation Administration	0.7	1.0	1.0	1.1	1.0	1.0	5.8
Financial Crimes Enforcement Network	1.0	1.2	0.0	0.0	0.0	0.0	2.2
Immigration and Naturalization Service	0.5	0.4	0.5	0.9	0.5	0.5	3.3
Office of Justice Programs	16.7	18.1	20.6	15.0	16.4	17.6	104.4
Interagency Crime and Drug Enforcement ^b	0.4	0.4	0.3	0.4	0.4	0.4	2.3
U.S. Coast Guard	5.2	2.4	1.2	1.0	0.7	0.5	11.0
National Highway Traffic Safety Administration	0.5	0.8	1.0	0.3	0.5	0.2	3.3
U.S. Customs Service	3.7	3.7	0.0	0.0	0.0	0.0	7.4
ADAMHA - Prevention	157.5	0.0	0.0	0.0	0.0	0.0	157.5
NIDA - Prevention	0.0	164.3	174.8	179.6	188.5	191.7	898.9
ADAMHA- Treatment	191.8	0.0	0.0	0.0	0.0	0.0	191.8
NIDA - Treatment	0.0	239.9	250.4	257.3	269.9	274.6	1,292.1
Office of Veterans Affairs - Treatment	2.7	2.1	3.2	3.9	3.9	3.9	19.7
Counterdrug Technology Assessment Center	21.0	15.0	8.5 ^c	8.0	16.0	18.0	86.5^c
Office of National Drug Control Policy	0.5	0.9	0.9	6.4	0.0	1.0	9.7
Total	\$504.6	\$498.1	\$520.3	\$542.2	\$569.6	\$559.2	\$3,194.0

^aThe 1997 figures reflect those requested but not spent.

^bFormerly the Organized Crime Drug Enforcement Task Forces.

^cTotal includes \$1 million in funding received from the ONDCP Director's discretionary fund account in fiscal year 1994. Therefore, the total of CTAC's spending is \$1 million more than CTAC's total appropriation.

Source: 1996 National Drug Control Strategy.

CTAC Funding by Various Spending and Technology Thrust Categories

Table III.1: CTAC Funding by Various Spending Categories, Fiscal Years 1992-97

Dollars in thousands

Category	1992	1993	1994	1995	1996	1997	Total
Demand reduction ^a	\$6,646	\$400	\$1,275	\$1,060	\$3,950	\$5,780	\$19,111
Supply reduction	10,819	7,014	6,702	4,959	5,990	6,365	41,849
Operational test and evaluation	3,554	4,102	69	1,356	3,910	4,705	17,696
Technical support	119	2,875	455	425	550	150	4,574
Reserve fund	(137)	608	0	200	0	0	671
Earmarks ^b	0	0	0	0	1,600	1,000	2,600
Total	\$21,001	\$14,999	\$8,501^c	\$8,000	\$16,000	\$18,000	\$86,501^c

^aCTAC funded demand reduction projects prior to being mandated by Congress to include this area in its mission. This responsibility was added by the Violent Crime Control and Law Enforcement Act of 1994 (P.L. 103-322).

^bThe El Paso Intelligence Center received \$600,000 and the Model Drug Law Conference received \$1 million from CTAC's fiscal year 1996 appropriation. In fiscal year 1997, the Law Conference received another \$1 million.

^cTotal includes \$1 million in funding received from the ONDCP Director's discretionary fund account in fiscal year 1994. Therefore, the total of CTAC's spending is \$1 million more than CTAC's total appropriation.

Source: CTAC.

Table III.2: Distribution of CTAC R&D Funding by Technology Thrust Area, Fiscal Years 1992-97

Dollars in thousands

CTAC thrust area	1992	1993	1994	1995	1996	1997	Total
Demand reduction	\$6,646	\$400	\$1,275	\$1,060	\$3,950	\$5,780	\$19,111
Nonintrusive inspection	3,006	1,385	2,517	2,074	1,250	2,255	12,487
Tactical technology	4,563	4,854	4,185	2,685	4,740	3,860	24,887
Wide-area surveillance	3,250	775	0	200	0	250	4,475
Total	\$17,465	\$7,414	\$7,977	\$6,019	\$9,940	\$12,145	\$60,960

Source: CTAC.

Overview Description of CTAC's Process for Identifying and Prioritizing Counterdrug Technology Needs and Selecting CTAC-Funded Research and Development Projects

The following is a detailed description provided by the Chief Scientist and other CTAC officials of the process to be followed by CTAC and the S&T Committee for identifying and prioritizing counterdrug technology needs and selecting R&D projects for funding with available CTAC funds.

The annual selection process for CTAC-funded R&D projects is to begin with the S&T Committee update of the scientific and technological needs. CTAC generally requests, in writing, the scientific and technological need updates from the counterdrug law enforcement members of the S&T Committee between April and May of each year. To address the demand reduction needs, CTAC is to consult with the National Institute of Drug Abuse. These scientific and technological needs are grouped into four areas called thrusts: (1) tactical technology, (2) nonintrusive inspection, (3) wide-area surveillance, and (4) demand reduction. The scientific and technological needs of the drug enforcement agencies are to be placed into a priority order according to short-, medium-, and long-term requirements in the thrust areas of tactical technology, nonintrusive inspection, and wide-area surveillance. The demand reduction thrust area is not included in the priority listing. The priority listing of short-, medium-, and long-term needs by thrust area is generally included in an appendix to CTAC's Blueprint Update.

To address the scientific and technological needs of the drug enforcement agencies, CTAC solicits either white papers or proposals¹⁸ through the Broad Agency Announcements (BAA).¹⁹ These submissions are from industry, federal government laboratories, federal agencies, and academia. Furthermore, the members of the S&T Committee can submit proposals at any time. According to the Chief Scientist, CTAC works with the members of the S&T Committee to develop a potential project. If the evaluation of the potential project is accepted by the expert panel that is comprised of government officials who are experts in the area of consideration, CTAC would consider the project for funding. CTAC's technical and contracting agent at the U.S. Army Electronic Proving Ground handles the evaluations of white papers and proposals as a result of the BAA. The Tennessee Valley Authority, CTAC's other technical and contracting agent, is primarily

¹⁸White papers are short papers that propose R&D solutions to the various counterdrug needs. When white papers are accepted, a proposal is requested. Proposals are detailed papers, generally about 100 pages long.

¹⁹In accordance with the Federal Acquisition Regulations, the BAA may be used by agencies to fulfill their requirements for scientific study and experimentation directed toward advancing the state of the art or increasing knowledge or understanding, rather than focusing on a specific system or hardware solution. Therefore, white papers and proposals received as a result of the BAA process must be evaluated on their own technical merit through a peer or scientific review process.

**Appendix IV
Overview Description of CTAC's Process for
Identifying and Prioritizing Counterdrug
Technology Needs and Selecting CTAC-
Funded Research and Development Projects**

responsible for interagency agreements with academic institutions. The appropriate experts²⁰ evaluate white papers and proposals for technical merit and execution risk as they are received. The evaluation criteria are as follows:

- potential contribution of the effort to the various counterdrug law enforcement agencies' specific missions, as well as relevance and contribution to the national technology base;
- overall scientific and technical merit of the proposal including (1) an understanding of the technical problem and its application to counterdrug enforcement and demand reduction, (2) the soundness of the approach, and (3) the probability of success;
- the performer's capabilities, related experience, facilities, techniques, or unique combinations of these that are integral factors for achieving the proposed objectives;
- the qualifications, capabilities, and experience of the proposed principal investigator, team member, or key personnel who are critical in achieving the proposed objectives; and
- realism of proposed cost and availability of funds.

On the basis of the evaluation of proposals, CTAC's technical and contracting agents compile a list of acceptable proposals for CTAC's consideration. This listing of acceptable R&D proposals is forwarded to CTAC.

Before the Chief Scientist makes his final selection of R&D projects for funding, he assesses those proposals on the basis of the following criteria: (1) alignment to the National Drug Control Strategy's goals and objectives, (2) multiagency use, (3) innovative and high payoff, (4) developmental risk, (5) duplication, (6) acquisition and transitional planning, and (7) time horizon (i.e., short-, medium-, or long-term). CTAC identifies a sponsoring agency for each project to provide oversight. CTAC then is to discuss each project with the lead agency to confirm that the project would meet the agency's counterdrug mission and to negotiate funding for the project. In addition, CTAC is to assess each agency's R&D counterdrug program plan to identify duplication and gaps in the counterdrug area. The Chief Scientist assesses the continuation of projects on the basis of the following criteria: (1) progress that has been made, (2) input from the sponsoring agency, and (3) funds availability. CTAC then assesses new and existing projects to

²⁰CTAC's experts consist of members of the S&T Committee, law enforcement experts, demand reduction experts, scientists, and engineers. According to a CTAC official, the evaluation panels consist of three to four people, on average.

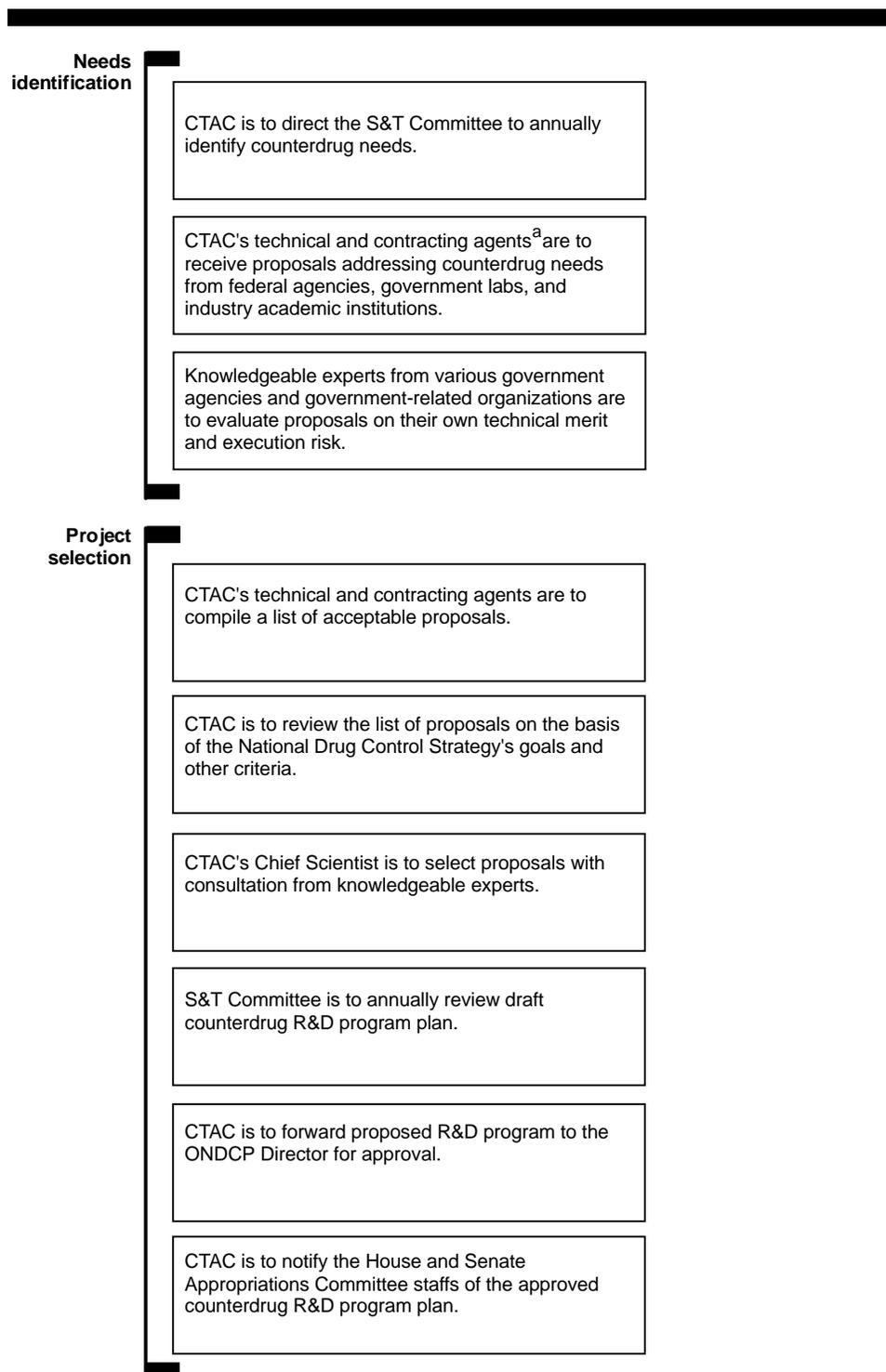
**Appendix IV
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decide the best balance for spending within budget constraints, according to a CTAC official.

On the basis of CTAC's assessment and consultation from experts, the Chief Scientist annually makes selections between June and September of the R&D projects to address the needs of counterdrug efforts. CTAC prepares a R&D counterdrug program plan that lists the selected R&D projects. The members of the S&T Committee review the R&D counterdrug program plan. The ONDCP Director approves the R&D counterdrug program plan. CTAC notifies the House and Senate Treasury and Postal Appropriation Committee staffs about the R&D counterdrug program plan between November and December. Figure IV.1 provides a flowchart of CTAC's technology needs identification and R&D projects selection process as designed.

**Appendix IV
 Overview Description of CTAC's Process for
 Identifying and Prioritizing Counterdrug
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 Funded Research and Development Projects**

**Figure IV.1: Flowchart of CTAC's
 Counterdrug Technology Needs
 Identification and Project Selection
 Process**



**Appendix IV
Overview Description of CTAC's Process for
Identifying and Prioritizing Counterdrug
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Funded Research and Development Projects**

^aThe U.S. Army Electronic Proving Ground at Fort Huachuca, AZ, and the Tennessee Valley Authority, TN, are CTAC's technical and contracting agents.

Technology-Related Contributions/ Accomplishments CTAC Identified and Lead R&D Agencies Confirmed as Completed and Successfully Fielded, FY 1992-97

Title	Lead agency	CTAC funding	Description
Modular Sensor Design	INS	\$750,000	This project produced a government-owned set of drawings and specifications to be used for the manufacturing of a new sensor design that includes the capability to employ the system tactically or strategically, with sufficient modularity to allow for upgrades in technology and introduction of new sensor types into the system. The initial units for this project have been delivered, and INS considered it successful.
Project Breakthrough	DEA	\$1,450,000	This project provides support to DEA and the Agricultural Research Service to accurately estimate cocaine production. Funding is provided for continued development of a scientific and statistically valid technique for estimating cocaine production. DEA reported that this system has been operational for 3-1/2 years and has been rated as successful.
Immunoassay Field Test Kits	FBI	\$150,000	This project developed improvements to existing field test kits that detect trace amounts of narcotics residue on hands and surfaces. The proof of concept for these kits was originally funded by the FBI. During the course of this project, field test kits were supplied to federal, state, and local law enforcement agencies for field use. Since this effort, a new commercial product has been developed.
Concealed Audio Transceiver Surveillance System	FBI	\$748,403	This communications system satisfied an immediate need to provide crucial, dependable communications for law enforcement officers who perform covert surveillance during counterdrug enforcement operations. The project was completed in March 1997, and the systems are now in use by the FBI.
Body-Worn Transmitter	FBI	\$627,992	This project produced a Low Probability of Intercept and Low Probability of Detection system, which is worn by agents to support both surveillance and communications requirements. Production units are now being used by the FBI.

(continued)

**Appendix V
Technology-Related Contributions/
Accomplishments CTAC Identified and Lead
R&D Agencies Confirmed as Completed and
Successfully Fielded, FY 1992-97**

Title	Lead agency	CTAC funding	Description
Text-Based Retrieval	FinCen	\$750,000	This project explored a number of commercially available products that permit the optical scanning of data into a database, thereby providing the capability to retrieve and index data for timely access with minimal human interface. FinCen rated the technology resulting from this project as helpful and timesaving.
Miniature Gamma Ray Backscatter	Customs	\$250,000	This project developed a miniaturized electronics package with an improved source/detector ratio to reduce the source size and permit a lighter, smaller contraband detector to be produced. This new detector can be mounted on an inspector's belt and be readily available for examining hard-to-inspect areas and items for illicit drugs. These detectors are being bought and used by Customs.
Gamma Ray Detector	Customs	\$382,143	This project developed a nonintrusive portable or mobile prototype field inspection system to detect contraband in empty containers that transport liquids. A prototype system was developed and was well-accepted by Customs' field offices.
Community Test and Evaluation Center	Customs	\$700,000	A community test-and-evaluation center was established in fiscal year 1991. The center continues to be used by Customs for field-testing technology.
Narcotics Detection Technology Assessment	Customs	\$500,000	This project consisted of a controlled series of field evaluations of existing, commercially available narcotics detection equipment. Four systems were tested during the first testing cycle, which was completed in November 1994. According to Customs, this project is ongoing and has been very useful.

Source: CTAC and R&D agencies.

Comments From the Office of National Drug Control Policy



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF NATIONAL DRUG CONTROL POLICY
Washington, D.C. 20503
December 17, 1997

Norm J. Rabkin
Director, Administration
of Justice Issues
U.S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Rabkin:

The Office of National Drug Control Policy (ONDCP) has reviewed the draft GAO report on the operations and contributions of the Counterdrug Technology Assessment Center (CTAC). ONDCP is in general agreement with the three recommendations contained in the draft report; however, we believe additional comments are needed to clarify the overall impact of CTAC sponsored technology.

ONDCP supports CTAC's work that spans many areas of research from counterdrug law enforcement for surveillance and tracking, communications, and drug crime information exploitation to the development of therapeutic medicines to cure addictions. In the area of successful research initiatives, CTAC has sponsored the development of advanced surveillance and tracking systems for front line law enforcement agencies, state-of-the-art brain scanners for medical researchers hunting for effective ways to treat addicts, and a cocaine vaccine which will work within the blood stream. Specifically, the CTAC sponsored neuroimaging center at NIDA's Addiction Research Center in Baltimore was dedicated December 1996. By January 1997, this center produced the highest quality images of the nucleus accumbens. Images of this high resolution are crucial to the development of medications to treat drug addictions.

Recommendation: 1
Science and Technology Committee's Charter should be updated.

The Director, ONDCP has assigned CTAC the lead to revise the 1990 charter of the Science and Technology Committee (S&T). The membership will include the officials of the President's Cabinet with drug control responsibilities to support the Director, ONDCP. This membership ensures that issues regarding science and technology policy and Research and Development program initiatives, which always require interagency coordination, can be decided at the appropriate levels of the government.

Recommendation: 2

All projects selected for CTAC funding have transitional/acquisition plans.

Written acquisition or transitional plans will be required for each project involving a prototype system as a deliverable. CTAC has been directed to use the ONDCP yearly budget recertification process to ensure lead agency compliance with requests for transition plans. CTAC has been directed to provide comments on compliance as part of the yearly budget recertification process of each drug control agency.

Recommendation: 3

Develop performance objectives and outcome measures.

ONDCP intends to verify CTAC's performance by assessing existing technologies and measuring their contribution to the effectiveness and efficiency of user agencies within the framework of the national Goals and Objectives. CTAC resources and processes address the last objective in each Goal of the 1997 *National Drug Control Strategy* (NDCS). ONDCP has developed a Performance Measurement System that will measure CTAC's effectiveness. After Congressional approval of this system in Spring 1998, annual targets will be decided for each Objective within the system. This system will include ONDCP's four areas of responsibility: High Intense Drug Trafficking Areas (HIDTAs), National Youth Anti-Drug, Media Campaign, the Drug Free Communities Act of 1977, and CTAC. As such, ONDCP will have an enhanced ability to correct some of the shortcomings noted in the GAO report.

Additionally, an agency-wide Information Management System (IMS) will be implemented in FY 1998 with refinements in FY 1999. The first Annual Progress Report on the effectiveness of drug control efforts will be published in FY 1999. This report will reflect assessments based on the data entered in FY 1998. As additional data is entered, the reports will become more comprehensive and cover more NDCS Objectives.

ONDCP's own Strategic Plan and Annual Plan will increase ONDCP's ability to rectify many of the problems surfaced in the GAO report. Every year, these plans will result in enhanced oversight and accountability for CTAC's mission, role and responsibility. Additionally, each year, as part of Government Performance Review Act (GPRA), ONDCP will produce an annual performance report, based on the requirements set forth in the Annual Plan, which will measure CTAC's effectiveness in meeting their goals as outlined in the previous year's Plan.

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CTAC's contributions will include outreach conferences and workshops, coordination of federal agency programs, and individual system development efforts. Technical assessments performed on existing systems and emerging technology prototypes will provide information to assist agency decision-makers on which systems can contribute best to operational effectiveness. The workshops and conferences will be used to disseminate technical information on state-of-the-art advancements. The extent to which new systems are acquired and utilized by federal, state, and local agencies will be used to measure performance.

Thank you for the opportunity to review the draft report and to provide forward comments.

Sincerely,


Janet Crist
Chief of Staff

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