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United States General Accounting Office
Washington, DC 20548

March 14, 2002

The Honorable Dick Armey
Majority Leader
House of Representatives

Subject: **Federal Funding for Selected Surveillance Technologies**

Dear Mr. Armey:

In recent years, law enforcement officials have relied increasingly on new technologies to aid them in accomplishing their enforcement responsibilities. Although the use of some of these technologies has raised concerns about their effect on individuals' privacy, the terrorist attacks of September 11, 2001, on the World Trade Center and the Pentagon have prompted calls for increased use of surveillance technologies to combat terrorism and other crimes that threaten the security of our nation. This letter responds to your July 2001 request that we gather information on the federal government's role in funding the research and deployment of three surveillance technologies and in promoting those technologies. The three technologies about which we gathered information (as of June 30, 2001) are facial recognition, red light cameras, and photo radar devices.

Background

Facial recognition is a developing technology, based on biometrics,[1] that can be used for identification purposes. In facial recognition, a facial geometry biometric is created by conversion of an image of a face into digital code. A computer can then compare the converted photograph with information in an established database. For example, for law enforcement purposes, a database can be created from police mug shots of convicted criminals such as sex offenders or shoplifters, from photographs of missing children, or from intelligence photographs of suspected terrorists. Facial recognition can also be used for other purposes, such as to control access to restricted areas or to prevent identity fraud. Other forms of biometric technologies include retinal scanning, fingerprint imaging, and signature or voice recognition.

Red light cameras are devices designed to help enforce traffic laws by automatically photographing vehicles that enter intersections after the traffic signal has turned red.

[1] Biometrics refers to the use of a person's physical characteristics or personal behavioral traits (e.g., fingerprints, signature verification, iris scan, hand or finger geometry, facial recognition) to identify, or verify the claimed identity of, that individual. Biometric technology can be used to verify the true identity of individuals accessing information systems and entering secured facilities.

A red light camera system typically is connected to the traffic signal and to sensors placed in the pavement at the crosswalk or stop line. The system continuously monitors the traffic signal and is triggered when any vehicle passes over the sensors at a speed higher than a preset minimum and within a specified time after the signal has turned red.

Photo radar devices, like red light cameras, are tools used to help enforce traffic laws. These devices consist of cameras attached to sensor units and placed along highways or streets to photograph vehicles exceeding the specified speed.

Scope and Methodology

We found no central source that identifies the federal departments and agencies employing these technologies. To identify such agencies, we searched and reviewed pertinent articles and technology studies and contacted officials at selected federal departments and agencies. We also searched publicly available customer information at selected technology companies' Internet Web sites to identify their federal customers. We identified 12 departments and independent agencies that may have been involved in one or more of the selected technologies. The enclosure lists the departments and agencies that we contacted.

To learn the federal departments' and agencies' roles in funding and promoting these technologies, we developed a data collection instrument, which we circulated in August 2001 to officials at the departments and agencies that we had identified. The instrument was designed to determine whether the departments and agencies that we contacted were involved in any of these technologies and, if so, to obtain data on funds that they have obligated for research and development, deployment, and promotion[2] of the technologies for each fiscal year from 1997 to June 30 of fiscal year 2001 and cumulatively for fiscal years prior to 1997. The data collection instrument was also designed to determine how departments or agencies had promoted the technologies and whether they had awarded any grants or contracts for deployment of the technologies in public places, such as parks or streets.

Owing to the terrorist attacks on September 11, 2001, several agencies were not able to complete our data collection instrument within the timeframe that we had initially specified to meet the needs of your office. As a result, and with the approval of your office, we extended the completion date to January 4, 2002. Within the 12 departments and independent agencies that we contacted, 35 entities completed our survey instrument. Another 8 entities did not complete the instrument but informed us that they were not involved with the technologies in question. The Central Intelligence Agency declined to respond to our survey. The Department of Commerce

[2] For the purposes of this report, we used the following definitions: *Research and development* includes the testing of the three surveillance technologies. *Deployment* means the purchase of technology equipment for agency use as a law enforcement or safety tool. *Promotion* means encouraging other federal, state, or local agencies through media campaigns, advertising, or the offer of grants to use the technologies for law enforcement or safety purposes.

indicated that it intended to respond to our survey, but it did not do so by the time we completed our review.

We did not verify the information that the departments and agencies provided. Moreover, because some agencies had issued grants to state and local governments, they said that they could not determine whether or to what extent the grantees had spent the amounts reported on these technologies.

We performed our work between July 2001 and January 2002.

Results

Of the 35 federal entities that completed our survey, 17 responded that they had conducted research and development or testing of one or more of the three technologies. They reported obligating nearly $51 million as of June 30, 2001, on facial recognition, red light cameras, and photo radar devices, with the largest amount reported for facial recognition. All of the 17 respondents reported that they had obligated funds for research and development, none reported using funds for deployment, and two reported promoting the technologies but did not report having obligated any funds. Following the terrorist attacks on September 11, 2001, federal interest in biometrics technology, especially facial recognition technology as a security measure, appears to have increased. Although we asked for data through June 30, 2001, several agencies voluntarily reported anecdotal information on anticipated future obligations for facial recognition technology. For example, the Department of State's Bureau of Intelligence and Research reported that although it had not obligated any funds for the deployment of facial recognition technology prior to June 30, 2001, it planned to work with the Bureau of Consular Affairs to integrate facial recognition technology into its counterterrorism database in fiscal year 2002. In addition, several departments responding to our survey indicated that they were considering biometric technologies as part of their overall security strategy.

Facial recognition technology. Four departments—the Department of State (State), the Department of Justice (Justice), the Department of Energy (Energy), and the Department of Defense (Defense)—reported a research and development role for facial recognition technology. Two Defense agencies reported promoting the technology but did not report having obligated any funds for that purpose. These agencies are the National Security Agency, which sponsored the Biometrics Consortium to, among other things, promote and provide a forum for information exchange on the science and performance of biometrics, and the Biometrics Management Office, which promoted the technology for verifying the identity of persons seeking access to facilities and information systems within Defense.

Among the 14 agencies and bureaus within the 4 departments involved in facial recognition research and development efforts, the technology was being developed primarily for law enforcement, public safety, or security (e.g., access to sensitive facilities or information) purposes. Other purposes for developing this technology include national defense, the combating of terrorism, and national security. All

responding Justice units reported developing the technology for law enforcement purposes. In addition, some Justice units indicated that the technology was being developed for public safety, security, corrections, and national security. State reported considering the technology as an aid in security and in the detection of fraudulent visa applications. Energy reported developing the technology for security and national security purposes. As table 1 shows, these departments reported obligating approximately $47 million dollars on the research and development of facial recognition technology through June 2001. Nearly 98 percent of this total was obligated by Justice and Defense—about $21.3 million and $24.7 million, respectively.

The first reported obligations for facial recognition technology were by Defense, which began research and development in fiscal year 1987. Justice reported first funding facial recognition technology efforts in 1994 as part of a research and development project at the El Paso Sector of the U.S. Border Patrol in an effort to identify suspect criminal aliens.

Table 1: Amounts Obligated by Federal Departments for Facial Recognition Technology, by Fiscal Year

Dollars in thousands							
Department/Agency	**Pre-1997**	**1997**	**1998**	**1999**	**2000**	**2001 (through June 30)**	**Total**
State	$0	$0	$0	$12	$450	$100	**$562**
Energy	125	0	0	400	0	0	**525**
Justice	3,668	4,843	5,500	787	784	5,709	**21,291**
Defense	5,730	744	3,171	2,872	7,330	4,843	**24,690**
Total	**$9,523**	**$5,587**	**$8,671**	**$4,071**	**$8,564**	**$10,652**	**$47,068**

Source: Departments' responses to GAO's survey.

Red light cameras. Of the departments and agencies responding to the survey, only the Department of Transportation (Transportation) reported obligating funds for research and development of red light camera technology. Within Transportation, only the Federal Highway Administration reported having obligated funds for research and development of the technology, beginning in fiscal year 1993.[3] As shown in table 2, Transportation reported obligating a total of $556,000, beginning in 1997, for research and development of red light camera technology for public safety and traffic engineering purposes.

[3] Transportation's Federal Highway Administration reported obligating funds as early as fiscal year 1993 but did not indicate any pre-1997 funding (see table 2). The funds were obligated for multiyear contracts or grants that were first funded in 1993 but that were closed in later fiscal years. The obligated funds were reported in the year that the contract or grant was completed (i.e., after 1997).

Table 2: Amounts Obligated by the Department of Transportation for Red Light Camera Technology, by Fiscal Year

Dollars in thousands							
Department	**Pre-1997**	**1997**	**1998**	**1999**	**2000**	**2001 (through June 30)**	**Total**
Transportation	$0	$110	$238	$135	$3	$70	**$556**

Source: Transportation's response to GAO's survey.

Photo radar devices. Transportation (Federal Highway Administration and National Highway Traffic Safety Administration) and Defense (Office of Naval Research) were the only departments to report having obligated funds for the research and development of photo radar devices. The Department of Interior's National Park Service reported testing the technology as a demonstration project but stated that Transportation funded the test. As shown in table 3, the departments reported that they had obligated about $3.1 million for research and development of photo radar devices as of June 30, 2001.

The departments reported that they used this technology for public safety, law enforcement, and military radars. According to the survey responses, Transportation's National Highway Traffic Safety Administration first obligated funds for photo radar devices in fiscal year 1978, although it has not obligated funds since 1999. Defense first obligated funds in 1974 but has not obligated any since before 1997.

Table 3: Amounts Obligated by the Departments of Transportation and Defense for Photo Radar Devices, by Fiscal Year

Dollars in thousands							
Department	**Pre-1997**	**1997**	**1998**	**1999**	**2000**	**2001 (through June 30)**	**Total**
Transportation	$1,878	$50	$242	$199	$0	$0	**$2,369**
Defense	750	0	0	0	0	0	**750**
Total	**$2,628**	**$50**	**$242**	**$199**	**$0**	**$0**	**$3,119**

Source: Departments' responses to GAO's survey.

Agency Comments

Because we are reporting information provided to us by the departments and agencies that completed our data collection instrument, we provided draft copies of the information contained herein to the respondents for their review and verification of the facts as presented. Their comments have been incorporated in this letter as appropriate.

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As agreed with your office, unless you publicly release the contents earlier, we plan no further distribution of this letter until 30 days from the issue date. At that time we will make the letter available to the departments and agencies that responded to our

data collection instrument. This letter will also be made available on GAO's home page at http://www.gao.gov.

If you should have any questions about this letter, please call Daniel C. Harris or me at (202) 512-8777. Key contributors to this report were Robert P. Glick and Carolyn Ikeda.

Sincerely yours,

Richard Stana
Director, Justice Issues

Enclosure

Departments and Agencies That GAO Contacted and Their Involvement with the Subject Technologies through June 30, 2001

Department or agency (in bold)	Facial recognition technology (FRT)	Red-light cameras (RLC)	Photo radar (PR)	Program	Fiscal year funding began
Commerce[a]					
Defense					
Technical support working group	Yes	No	No	R&D	1998
Biometrics Management Office	Yes	No	No	R&D and Promotion	1999
Defense Advanced Research Projects Agency	Yes	No	No	R&D	2000
Naval Surface Warfare Center	Yes	No	No	R&D	1993
National Security Agency	Yes	No	No	R&D and Promotion	1987
Office of Naval Research	Yes	No	Yes	R&D (FRT) R&D (PR)	1996 1974
Naval Criminal Investigative Service	No	No	No		
Acquisition, Logistics, & Technology (Army)	No	No	No		
Defense Criminal Investigative Service	No	No	No		
Undersecretary of Defense,[b] Comptroller (Chief Financial Officer)	No	No	No		
Deputy Chief of Staff for Operations and Plans,[b] Security Force Protection, and Law Enforcement Division (Army)	No	No	No		
Criminal Investigation Command[b] (Technical Services) (Army)	No	No	No		
Office of the Asst. Secretary, Acquisition[b] (SAF/AQA) (Air Force)	No	No	No		
Office of Special Investigations[b] (Technical Services) (Air Force)	No	No	No		
Advanced Technology and Planning Force Protection,[b] C2 SPO (Air Force)	No	No	No		
Energy					
Special Technologies Program, Office of Intelligence	Yes	No	No	R&D	1996
Safeguards and Security	Yes	No	No	R&D	1999
Oak Ridge National Laboratory	No	No	No		
Policy and Internal Controls Management	No	No	No		
Interior					
National Park Service	No	No	Yes	R&D	Funded by NHTSA
Justice					
National Institute of Justice, Office of Science and Technology	Yes	No	No	R&D	1995
Federal Bureau of Investigation	Yes	No	No	R&D	2000
Community Oriented Policing	Yes	No	No	R&D	1996
Immigration & Naturalization Service	Yes	No	No	R&D	1994
U.S. Marshals Service	No	No	No		
Drug Enforcement Administration	No	No	No		

Department or agency (in bold)	Facial recognition technology (FRT)	Red-light cameras (RLC)	Photo radar (PR)	Program	Fiscal year funding began
Justice Management Division	No	No	No		
Bureau of Prisons	No	No	No		
State					
Bureau of Consular Affairs	Yes	No	No	R&D	2000
Bureau of Diplomatic Security	Yes	No	No	R&D	1999
Bureau of Intelligence and Research	No	No	No		
Bureau of Administration	No	No	No		
Transportation					
Federal Highway Administration, Office of Safety Design	No	Yes	Yes	R&D (RLC) R&D (PR)	1993 1997
Federal Highway Administration, Operations Core Business Unit	No	No	No		
National Highway Traffic Safety Administration, Traffic Safety Program	No	No	Yes	R&D	1978
Federal Aviation Administration	No	No	No		
Treasury					
U.S. Customs Service	No	No	No		
Financial Crimes Enforcement Network	No	No	No		
Alcohol, Tobacco and Firearms[b]	No	No	No		
Secret Service	No	No	No		
Central Intelligence Agency[c]					
Nuclear Regulatory Commission	No	No	No		
Office of National Drug Control Policy[b]	No	No	No		
U.S. Postal Service	No	No	No		

Legend: R&D = research and development.
[a] Did not respond to our survey.
[b] Did not complete the survey but reported no involvement in any of the three technologies.
[c] Declined to reply to our survey.

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