

# 2008

LAW ENFORCEMENT AND CORRECTIONS TECHNOLOGY ADVISORY COUNCIL

## *Annual Report*



# About the National Institute of Justice

NIJ is the research, development and evaluation agency of the U.S. Department of Justice and is dedicated to researching crime control and justice issues. NIJ provides objective, independent, evidence-based knowledge and tools to meet the challenges of crime and justice, particularly at the state and local levels. NIJ's principal authorities are derived from the Omnibus Crime Control and Safe Streets Act of 1968, as amended (see 42 USC § 3721–3723) and Title II of the Homeland Security Act of 2002.

The NIJ Director is appointed by the President and confirmed by the Senate. The NIJ Director establishes the Institute's objectives, guided by the priorities of the Office of Justice Programs, the U.S. Department of Justice and the needs of the field. The Institute actively solicits the views of criminal justice and other professionals and researchers to inform its search for the knowledge and tools to guide policy and practice.

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# Executive Summary

## TOP 10 PRIORITIES 2008

**L**ECTAC, the Law Enforcement and Corrections Technology Advisory Council, is a critical part of NIJ's Research, Development, Test and Evaluation process, providing practitioner-based input on what technologies are most important and what technology "gaps" currently exist. This "real world" input helps shape the activities of NIJ's Science and Technology portfolios, as well as NIJ-funded research supporting the development and implementation of new technologies for law enforcement and corrections use.

LECTAC is an entity comprised of approximately 40 leaders from law enforcement, corrections, forensic science and criminal justice professional associations. The members of LECTAC have identified subject-matter expertise in their respective disciplines and are tasked with providing an executive-level review of the issues presented to them. The information reviewed by LECTAC in ranking these priorities has been developed by the 17 NIJ-sponsored Technology Working Groups. These TWGs, also comprised of law enforcement and corrections practitioners, are "working level" subject-matter experts who are currently assigned to roles in their agencies where they routinely work with technologies in their particular area of expertise.

LECTAC members are appointed by the National Law Enforcement and Corrections Technology Center-National, with NIJ approval, based on their records of distinguished service. They represent federal, state, and local criminal justice agencies; labor organizations; and national and international

law enforcement, corrections, and criminal justice organizations.

LECTAC works to strengthen links between NIJ and the law enforcement and corrections community by reviewing and analyzing the present and future technological needs of the criminal justice system and recommending research and development priorities to NIJ.

LECTAC also:

- Advises NLECTC on equipment testing and the creation of standards, user guidelines and technical reports.
- Reviews NLECTC system programs and recommends how to improve program relevance to state and local law enforcement and corrections needs.
- Collaborates with NLECTC-National and the National Institute of Standards and Technology, Office of Law Enforcement Standards to provide technical assistance to manufacturers and the criminal justice system.
- Reviews and comments on draft publications.
- Participates in ad hoc committees established by NLECTC-National to provide guidance on technical and policy issues.
- Drafts articles for applicable publications.
- Makes presentations to peer groups to promote awareness of NLECTC programs and activities.

### Biometrics/Information-Led Policing

Biometric and information technology-based tools to rapidly, accurately and positively confirm the identity of individuals.

### Body Armor

Lightweight, flexible ballistic-resistant armor that maintains NIJ-rated level of protection for at least five years in daily field use, in conjunction with a test protocol to confirm the ongoing performance of field-worn armor.

### Community Corrections

Technology to locate, track and communicate the whereabouts of predatory offenders in all environments.

### Corrections

Improved contraband detection and monitoring technologies for institutional facilities (e.g., corrections, schools and courts), including wireless communication detection/defeat and staff identification, location and duress technologies.

### Electronic Crime

Portable digital device forensic examination hardware and software tools.

### Explosives

Technologies/tools to remotely detect and neutralize both body-worn and vehicle-borne improvised explosive devices.

### General Forensics

Automated Fingerprint Identification System interoperability.

### Less Lethal

Reliable, medically safe and effective less-lethal tools for law enforcement and corrections personnel to control combative/non-cooperative individuals, including conducted energy device improvement and new calumative agents, with a delivery system for same.

### Pursuit Management

Technology to control or stop pursuits using cooperative technologies.

### Sensors and Surveillance

Technology to detect concealed weapons on an individual (law enforcement, corrections and school safety).

# Message From the LECTAC Director

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September 2008

The Law Enforcement and Corrections Technology Advisory Council, or LECTAC, is pleased to provide the National Institute of Justice with their “Top 10” list of technology requirements for 2008.

The members of LECTAC and the Technology Working Groups do not presume that their deliberations encompass the full range and breadth of technology requirements for all of the approximately 19,000 individual state and local law enforcement agencies, 4,400 local jails, 50 state correctional agencies and 350 crime laboratories in the United States today. We encourage LECTAC and TWG members to seek input from their colleagues in other agencies and bring those issues forward in their meetings. We also encourage law enforcement, corrections and forensics professionals reviewing this document to provide us with comments and suggestions as well. Your comments may be submitted to NLECTC-National in writing by fax at (301) 519-5149, or by e-mail to [asknlectc@nlectc.org](mailto:asknlectc@nlectc.org) (please be sure to include “LECTAC” in the subject line of your message).

Working together, we seek to advance law enforcement, corrections and forensic science through the identification and implementation of new technologies to better equip and ensure practitioners’ safety in their daily duties.

Sincerely,



Lance Miller  
Director, NLECTC-National  
LECTAC Program Manager  
Rockville, Maryland

# Message From the LECTAC Chair

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Sept. 3, 2008

Dear Colleagues:

On July 24-25, 2008, the Law Enforcement and Corrections Technology Advisory Council convened in Arlington, Va., to review the Technology Working Groups' technology needs and the operational requirements established during the 2008 TWG meetings. LECTAC was tasked with reviewing 129 high-priority technology recommendations from 17 reporting TWGs and to produce a "Top 10" list of technology priorities.

With the assistance of National Law Enforcement and Corrections Technology Center-National staff, LECTAC reviewed all 129 high-priority technology recommendations using the three-phase process outlined below. Please note that the first two phases were conducted by e-mail correspondence in advance of the meeting:

Phase 1: LECTAC members reviewed the 129 requirements submitted by the 17 TWGs and ranked the top three requirements for each TWG. This resulted in a list of 51 requirements.

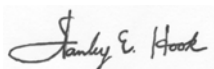
Phase 2: LECTAC members reviewed the list of 51 and ranked what they considered to be the top 25 requirements from this list. The resulting list of 25 requirements formed the basis of discussion at the annual business meeting.

Phase 3: LECTAC determined the final Top 10 list from the 25 requirements resulting from Phase 2.

During the deliberations at the business meeting, LECTAC noted that there were a number of common themes between the requirements on the list of 25; as such, the LECTAC members were able to incorporate 21 of these 25 TWG requirements into the final Top 10 list for 2008.

LECTAC is submitting the technology priorities outlined in the Executive Summary and expanded on in the body of the report. They are not in rank order because the consensus of LECTAC was that each was of high importance and thus was given equal prioritization.

Sincerely,



Stanley Hook  
Chief of Police  
Smyrna (Ga.) Police Department  
LECTAC Chair

# Introduction

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In 2005, the National Institute of Justice revised its technology development process, implementing a Research, Development, Test and Evaluation process that fully integrates all elements of the NIJ science and technology program. This process encompassed the creation of Technology Working Groups composed of subject-matter experts from the fields of law enforcement and corrections and incorporated the oversight of the Law Enforcement and Corrections Technology Advisory Council. Additional oversight and implementation direction is provided by the National Law Enforcement and Corrections Technology Center-National. This process helps NIJ's Office of Science and Technology fulfill the requirements outlined in the Homeland Security Act of 2002, which include establishing and maintaining advisory groups to assess law enforcement technology needs of federal, state and local law enforcement agencies.

This process helps to ensure that NIJ's activities are based on practitioner-driven needs. The priorities that are generated by the working groups are incorporated into NIJ's research and development solicitations, and are also shared with other federal agencies including the U.S. Department of Defense and U.S. Department of Homeland Security to help leverage their research and development and technology investments.

The NLECTC system, at the direction of NIJ, established 17 TWGs to represent the identified core technology portfolios of NIJ/OS&T. These technology portfolios are as follows:

- Biometrics.
- Body Armor.
- Communications Technologies.
- Community Corrections.
- Corrections.
- Electronic-Crime (E-Crime).
- DNA Forensics.
- Explosives.
- General Forensics.
- Geospatial Technologies.
- Information-Led Policing.
- Less-Lethal Technologies.
- Modeling and Simulation.
- Personnel Protection.
- Pursuit Management.
- School Safety.
- Sensors and Surveillance.

These TWGs meet twice each year to hear briefings and establish and prioritize technology needs in their portfolio areas.

## LECTAC Review

LECTAC meets annually to review the high-priority technology needs as established by the TWGs and create a "Top 10" list of technology needs for NIJ derived from the TWGs' high-priority list. This list is used by NIJ program managers to prepare technology solicitations for proposals and to provide a basic direction for technology development within the various NIJ technology portfolios.



# Methodologies

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Prior to the annual meeting, NLECTC-National provided LECTAC members with a non-ranked list of 129 technology needs identified as high priority by the various TWGs, and background materials including selection criteria for committee members' use in ranking projects. These criteria are as follows:

- Which projects will have the greatest impact on your ability to do your jobs? Those having greater impact would be ranked higher.
- Is there an existing technology that can satisfy the needs of this project? If so, then perhaps this item should be rated lower than others.
- Does this project satisfy multiple areas of need (e.g., communications, personnel safety and weapons detection)? If so, then perhaps it should receive a higher rating.
- Are there any significant obstacles that would preclude the adoption/implementation of this technology (e.g., legal, policy, training, funding, community acceptance)? If so, please note the obstacle(s). If the obstacle is determined to be significant, is there a potential mitigation plan that can be developed to address the obstacle? If not, then perhaps this item should be rated lower than others, if at all.

LECTAC members received the complete list of high-priority items via e-mail prior to the meeting and were asked to rank the top three items from each TWG, resulting in a list of 51 requirements. In the next phase, each LECTAC member ranked these 51 requirements in order of importance; their responses were compiled and analyzed, and the top 25 scorers were compiled and provided to committee members prior to the meeting for their use in determining the final rankings. (This report includes the text as sent to LECTAC members at the end of the narrative.)

After LECTAC finalized its "Top 10" list, NLECTC-National notified the TWG lead for each of these respective requirements to ask their TWGs to provide a detailed requirements statement for each project.

## Performance Measurement and Evaluation

Performance measurement and evaluation have become more important as aspects of accountability. In this regard, NIJ has expanded the LECTAC/TWG process to include consideration of the specific problem and desired outcomes related to needs requirements. By including the development of problem statements and desired outcomes of the research and development in the needs requirements and prioritization process, NIJ can better assess the urgency of a given problem and in this way, better prioritize allocation of increasingly scarce resources. Also, by including declaration of desired outcomes, NIJ can better design appropriate methods for use in evaluation of technologies resulting from the process.

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The primary purpose of a problem statement is to focus the attention of the problem-solving team. However, if the focus of the problem is too narrow or the scope of the solution too limited, creativity and innovation may be stifled. A problem statement is the description of an active challenge faced by practitioners that does not have adequate solutions available. The problem statement should address all six questions: what, how, where, when, why and who.

Statements of expected outcomes follow directly from the problems and needs requirements that the newly developed technology will be designed to address. As mentioned above, resources for criminal justice are increasingly scarce while the criminal justice system is being held to higher standards of accountability. In this regard, NIJ is increasingly being asked whether research and development efforts are resulting in measurable and significant outcomes as a result of the investment in public funds.

Statements of desired outcomes should always include some estimation of effect. There may be many or multiple desirable outcomes and impacts resulting from the successful development of a new or innovative technology. The development of statements of desirable outcomes allows NIJ to assess the extent, nature and type of evaluation research needed to provide an assessment of the technologies' effectiveness, efficiency and costs/benefits.

# Business Meeting

Arlington, Virginia  
July 24–25, 2008

Lance Miller, director of the National Law Enforcement and Corrections Technology Center-National (which organized the meeting), took the lead in conducting the meeting. Chief Stanley Hook of the Smyrna (Ga.) Police Department, who has served as LECTAC chair for the past four years, announced that he would be stepping down from that position at the conclusion of this year's meeting and members were asked to consider nominations for vacant spot. NLECTC-National and NIJ recognized Chief Hook for his LECTAC service. Three retired LECTAC members (Steve Chianesi, Lee Doehring and Sid Heal) were recognized for their years of service and three new members (Tom Roy, Robert Sudlow and James Upchurch) were introduced.

The remainder of the agenda for the meeting was derived from responses to an e-mail survey of LECTAC members. In addition to the technology priority review, LECTAC members viewed a number of presentations on various aspects of NIJ's technology portfolio, the new Centers of Excellence, and new and improved Internet tools to help them in their day-to-day work:

- Dr. John Morgan, Deputy Director for Science and Technology, NIJ, NIJ Office of Science and Technology overview.
- Marc Caplan, Chief, Operational Technologies Division, program overview.
- William Ford, Chief, Information and Sensors Technology Division, program overview.
- Lois Tully, Deputy Chief, Investigative and Forensic Sciences Division, program overview.
- Mr. Miller, New Body Armor Standard and Standards and Testing Program.
- Chris Tillery, Associate Deputy Director for Science and Technology, NIJ, 1401 Program.
- Rick Mulvihill, Director, Communications Technologies Center of Excellence, overview.
- Andy Mazzara, Director, Weapons and Protective Systems Center of Excellence, overview.
- Martin Novak, E-Crime Program Manager, overview.
- Frances Scott, Sensors and Surveillance Program Manager, overview.
- Donna Ross, NLECTC-National JUSTNET Coordinator, new JUSTNET format.
- Mike Lucey, Deputy Director, OLETC, Tech Product Network.

All presentations were made available to LECTAC members in their entirety via CD-ROM.

Mr. Miller stated he had been assured by NIJ that the agency had no preconceived ideas about what belonged on the list and did not seek to influence the selection process. Rich Taylor of Lockheed Martin (host organization for NLECTC-National), as a neutral party, facilitated the selection discussion. LECTAC participants ended the first day of the meeting by deciding to retain six

of the 10 ranked highest on the top 25 list, and as “homework,” to review the remaining priorities and come back the next day with nominations for the remaining “Top 10” priorities and with recommendations for priorities that could be combined, in order to come up with the final product. Mr. Miller closed the discussion by reminding LECTAC members that two channels feed input into NIJ priorities. The first is the TWGs, and their work provides a roadmap for a particular portfolio and informs the LECTAC process. LECTAC provides the big picture. Committee participants could simply select the 10 priorities ranked highest in the survey, but they also have an opportunity to devise broader categories that touch on several different kinds of needs and thus help the greater good. However, these broad categories still must map back to specific requirements that were developed by the TWGs to ensure the continuity of the process.

On the second day, following considerable discussion, the members who were present came up with a group of 10 priorities that included several combined items. Because a substantial number of members could not attend the meeting, those who were present voted to circulate the list of 10 as a draft among the entire membership for approval. The results presented in this report represent approval by the entire membership.

In other business, Law Enforcement Vice Chair Greg Bazick, deputy chief of the Ann Arbor (Michigan) Police Department, was nominated for a two-year term as chair. This nomination will be placed on a ballot in front of the entire membership, along with a request for nominations to fill Deputy Chief Bazick’s slot as law enforcement vice chair.

Note: Based on the ballot submitted to LECTAC members following the meeting, Deputy Chief Bazick’s nomination as chair was unanimously approved by the responding membership. Based on LECTAC’s nomination and with NIJ concurrence, Deputy Chief Bazick was appointed as the new LECTAC chair for a two-year term that expires August 31, 2010.

## Biometrics

Maps to TWGs

Biometrics, Information-Led Policing

Maps to Requirements # (In order of importance)

2, 7, 20, 25

<b>Technology Need or Requirement</b>	Biometric and information technology-based tools to rapidly, accurately and positively confirm the identity of individuals.
<b>Description of Need</b>	Generally, law enforcement and corrections officers need improved technologies to facilitate confirming the identity of a person of interest in a timely manner. Specifically, they need the ability to identify a person through capture of a facial image and/or voice recording on an audio/video device, which can then be checked against a nationwide database, and the ability to speed up the collection of finger and palm prints, possibly via a device that can collect these prints in the field and then convert them to a digital format for comparison to a nationwide database. A standard that addresses the timeliness of data provided to the consumer is needed to accompany the technology.
<b>Expected Outcomes</b>	<ol style="list-style-type: none"> <li>1) Reduce the number of felonious assaults/fatalities of law enforcement officers by reducing or eliminating the amount of time spent waiting in the field to identify individuals detained during field interviews/ traffic stops.</li> <li>2) Increase efficiency and reduce the amount of time spent processing arrestees and incarcerated subjects, ensuring accurate and positive identification of these individuals.</li> <li>3) Increase public safety through rapid and accurate biometric identification of wanted criminals, known/suspected terrorists, individuals on parole/probation and persons of interest to ongoing investigations from remote or standoff distances in public venues.</li> <li>4) Enhance criminal justice/citizen interactions with regard to safety, efficiency and effectiveness through adoption and implementation of these technologies.</li> </ol>

## Body Armor

Maps to TWGs

Body Armor, Personal Protective Equipment

Maps to Requirements # (In order of importance)

4, 5

### Technology Need or Requirement

Lightweight, flexible ballistic-resistant armor that maintains NIJ-rated level of protection performance for at least five years in daily field use, in conjunction with a test protocol to confirm ongoing performance of field-worn armor.

### Description of Need

The law enforcement and corrections community needs a lightweight, flexible, breathable and durable vest that meets existing NIJ standards, because the lighter and more comfortable a vest is, the more likely an officer is to actually wear it full-time. Additionally, in order to assure agencies and officers that armor will maintain its integrity for at least 5 years, the law enforcement and corrections community needs the development of a formal test protocol for used (field-worn) body armor.

### Expected Outcomes

- 1) Produce new fibers, materials and construction methods that would result in a 25-percent reduction in the current weight of armor at a given threat level while providing equal or improved ballistic resistance. Armor resulting from these efforts would be worn more frequently by officers, achieving a 30-percent increase in wear rates over current levels.
- 2) Use standards and test methods to evaluate the ongoing ballistic performance of units of armor in field use, related back to the conditioning protocols defined in NIJ Standard 0101.06. These efforts would ultimately lead to the development of non-destructive test methods to assess the ongoing ballistic resistance of individual units of armor.

## Community Corrections

Maps to TWGs

Community Corrections

Maps to Requirements # (In order of Importance)

10

### Technology Need or Requirement

Technology to locate, track and communicate the whereabouts of predatory offenders in all environments.

### Description of Need

Community corrections professionals need better location and tracking technologies to monitor and communicate information about the whereabouts of predatory and violent offenders in all environments within the community, because current location tracking systems do not perform to the requirements of public safety. Solutions must provide cost-effective, accurate and reliable continuous monitoring and communication of whereabouts in all environments and include highly secure circumvention prevention and detection measures.

### Expected Outcomes

Create continuous tracking capability with 100-percent reliability outdoors and 90-percent reliability indoors, within 10 meters. Tracking would be achievable in areas such as subways and inside commercial buildings and would be precise to building level.

## Corrections

Maps to TWGs

Corrections (Institutional), Community Corrections,  
Sensors & Surveillance, School Safety

Maps to Requirements # (In order of importance)

8, 15, 18

### Technology Need or Requirement

Improved contraband detection and monitoring technologies for institutional facilities (such as corrections, schools and courts), including wireless communication detection/defeat and staff identification, location and duress technologies.

### Description of Need

- 1) Corrections personnel require technologies for use at egress and ingress points that will integrate and improve existing methods of detecting a broad spectrum of contraband such as, but not limited to, metallic and non-metallic weapons, drugs, tobacco and wireless communication devices. This portal device must safely and non-intrusively detect contraband carried on the body and within body cavities, provide rapid throughput, be user-friendly in operation and maintenance and most importantly, be affordable enough to be a viable solution for most correctional agencies.
- 2) Corrections personnel require cost-effective technology that eliminates unauthorized wireless communications and/or assists in accurate (x,y,z coordinates) location detection of a broad range of wireless communication, including, but not limited to, cell phones, walkie talkies, Blackberries<sup>®</sup>, Bluetooth<sup>®</sup> devices and personal data assistants. This technology must have the capability to defeat and/or detect unauthorized wireless communication devices based on their frequency bandwidth, whether intact or broken down into their component parts, whether powered on or not and without interfering with radio frequency devices used by staff. This defeat/detection system should be able to be integrated into a central data and communications infrastructure.
- 3) Corrections staff need technology that will locate staff continuously in real time throughout a facility so that they can be helped in case of emergency. This technology shall be cost-effective, non-proprietary, based on open standards, highly accurate, highly reliable and able to be integrated into a central data and communications infrastructure.



**Expected  
Outcomes**

Enhance ability to search all individuals entering a facility to a 90-percent accuracy of detection rate, resulting in a 50-percent reduction in the amount of contraband introduced into a typical correctional facility.

Reduce the number of unauthorized wireless communications devices introduced into a facility by 95 percent, with an associated reduction in criminal activity by 95 percent.

Reduce time needed to respond to staff emergencies by 35 percent, with a corresponding 25-percent reduction in number of staff injuries, 50-percent reduction in number of days missed due to injury, 50-percent reduction in workers' compensation claims and 10-percent increase in staff retention.

## Electronic Crime

Maps to TWGs  
Electronic Crime

Maps to Requirements # (In order of importance)

14

### Technology Need or Requirement

Portable digital device forensic examination hardware and software tools.

### Description of Need

State and local law enforcement needs tools, both hardware and software, to recover digital evidence from cell phones, personal data assistants and other mobile devices, as well as training on cell phone and portable digital device data acquisition and forensic examination.

### Expected Outcomes

An increase in the number of state and local law enforcement personnel qualified to acquire data from cell phones and mobile devices seized as evidence, improved resources and skills in examining the acquired data for information of investigative value and more successfully concluded investigations of cases in which cell phones and mobile devices were used to commit or facilitate criminal activity, and thus more perpetrators brought to justice.

## Explosives

Maps to TWGs

Explosives

Maps to Requirements # (In order of Importance)

9, 13

### Technology Need or Requirement

Technologies/tools to remotely detect and neutralize both body-worn and vehicle-borne improvised explosive devices.

### Description of Need

Law enforcement needs improved tools and technologies to neutralize both body-worn and vehicle-borne IEDs, including the ability to remotely deploy and execute tools capable of defeating vehicle-borne IEDs, an integrated remote firing system incorporated in a rapidly deployable tool that limits collateral damage and the ability to detect suicide bombers at a safe distance.

### Expected Outcomes

Measurable increase in the number of body-worn and vehicle-borne IED attacks detected prior to detonation, resulting in lives saved, injuries prevented and damage to property prevented.

## General Forensics

Maps to TWGs  
General Forensics

Maps to Requirements # (In order of importance)

12

Technology Need  
or Requirement

Automated Fingerprint Identification Systems interoperability.

Description of  
Need

Law enforcement needs improved information sharing between jurisdictions, including improved interoperability with AFIS. This would include development of a “Universal Translator,” changes in various state policies, standard development and software development.

Expected  
Outcomes

Measurable decrease in the amount of time required to positively identify individuals through the use of fingerprints. Measurable increase in the number of wanted individuals identified through fingerprint technology and a corresponding decrease in criminal activity resulting from these individuals being detained/incarcerated.

## Less Lethal

Maps to TWGs

Less Lethal

Maps to Requirements # (In order of importance)

3, 16

### Technology Need or Requirement

Reliable, medically safe and effective less lethal tools for law enforcement and corrections personnel to control combative/non-cooperative individuals, including conducted energy device improvement and new caltivate agents and a delivery method for same.

### Description of Need

The criminal justice community needs science-based and incremental improvement in CED technology and its operational effects on mobility, physical function and motivation for use with single aggressors and barricaded suspects, and in corrections-inmate confrontations. The criminal justice community also needs a capability to inhibit metabolic functioning of individuals and groups (caltivate agents) that is quick-acting, completely reversible and has no long-term physical or psychological effects, along with a method of delivery for this metabolic function inhibitor that is capable of delivering at a variety of ranges to a target of one or many.

### Expected Outcomes

- 1) Improved range to 30 feet with the same effects and precision at zero feet as at 30 feet, with 100-percent immobilization and/or 100-percent skeletal muscle-function impairment, 100-percent immediate compliance and full recovery within 30 minutes.
- 2) Improved ability to resolve hostage situations with reduced injury and death to officers, victims and subjects.

## Pursuit Management

Maps to TWGs  
Pursuit Management

Maps to Requirements # (In order of Importance)

6

### Technology Need or Requirement

Technology to control or stop pursuits using cooperative technologies

### Description of Need

The law enforcement community needs the ability to safely control and stop pursuits using cooperative technologies. Many original equipment and after-market systems exist that allow remote monitoring and control of a vehicle's functions. This technology is "cooperative" because the system depends on technology pre-installed on vehicles that is designed to "cooperate" with law enforcement instructions during an emergency.

The telematics technology, "OnStar," operated by General Motors, is an example of a cooperative technology that has many of the desired features, such as a data and voice communications link, a full-time call center, GPS tracking capability and integration with a vehicle's electronics. A system like this has the existing capability to flash the headlights and sound the horn of a fleeing vehicle as a rudimentary warning system. The potential also exists to control a vehicle's speed.

The technology should include procedures and mechanisms to help law enforcement agencies use those systems for public safety.

### Expected Outcomes

- 1) A measurable decrease in the number of police pursuits as the need for such activity will be mitigated by the implementation and use of this technology.
- 2) A measurable decrease in the number of personal injury and property damage vehicle accidents involving police vehicles and/or resulting from police pursuits.

## Sensors & Surveillance

Maps to TWGs

Sensors & Surveillance

Maps to Requirements # (In order of importance)

1, 11, 19

<b>Technology Need or Requirement</b>	Technology to detect concealed weapons on an individual (law enforcement, corrections and school safety).
<b>Description of Need</b>	Improved technology is needed to detect concealed weapons on an individual in a variety of situations, such as in shopping malls, parks and street corners; in correctional environments and at the entrances to schools. This technology should be able to be operated surreptitiously from a distance of 15 or more meters and be able to detect small homemade or improvised weapons made from items commonly found in the correctional environment, including ferrous and non-ferrous metals, plastic, Plexiglas <sup>®</sup> , wood and stainless steel.
<b>Expected Outcomes</b>	<ol style="list-style-type: none"> <li>1) A measurable decrease in felonious assaults on individuals and law enforcement/corrections personnel as a result of the implementation and use of this technology.</li>   <li>2) A measurable decrease in violent crimes (e.g., armed robbery, rape) associated with the use of concealed weapons as a result of the implementation and use of this technology .</li> </ol>

# LECTAC Round 2 Rankings (Top 25)

LECTAC meets annually to review the high-priority technology needs as established by the Technology Working Groups and create a “Top 10” list of technology needs for NIJ derived from the TWGs’ high-priority list. This list is the product of the first two phases of the process: Review of the 129 requirements submitted by the 17 TWGs and ranking the top three requirements for each TWG, then ranking the top 25 from that list. These results were discussed at the annual business meeting to create the final list.

**RANKING: 1**

## Sensors & Surveillance (Concealed Weapons Detection)

### TWG Recommendation

Detect Concealed Weapons on an Individual (Law Enforcement)

### Description of Issue/Requirement/Need

Law enforcement officers need the ability to detect handguns concealed either on a person’s body or elsewhere in their possession in public places such as shopping malls, parks and street corners. This technology should be able to be operated surreptitiously from a distance of 15 or more meters.

### TWG Recommended Outcomes

There are several commercially available imaging technologies that partially meet this requirement, but do not provide the necessary distance requirement of 15 meters. There are also several non-imaging devices that do provide the necessary distance. The TWG wants technologies that meet these requirements.

**RANKING: 2**

## Biometrics

### TWG Recommendation

Confirming and Fixing the Identity of Individuals

### Description of Issue/Requirement/Need

Law enforcement/corrections officers need improved technologies to use when attempting to confirm a person’s identity. This technology would be used in situations such as: 1) intake and outtake of inmates; 2) positive identification of visitors to correctional institutions; 3) confirming the identity of a person possessing multiple identification documents; 4) mortuary identification (the TWG noted interest in technologies that could be used for rapid identification in the wake of a mass casualty event); 5) wants and warrants verification; 6) offender/suspect tracking (sex offenders, gangs, arsonists, etc.); 7) criminal history checks; 8) facilitation of queries across criminal justice information system databases. The TWG recognized four prominent biometric technologies as candidates: 1) finger/palm prints, 2) facial recognition, 3) iris scan, 4) voice recognition.

### TWG Recommended Outcomes

None provided.



**RANKING: 3**

## Less Lethal

### TWG Recommendation

Conducted Energy Device Improvement  
(LLD-2006-R01)

### Description of Issue/Requirement/Need

Current conducted energy devices are limited by range. Devices that penetrate skin often require medical followup. Wires of tethered devices sometimes break or become detached from the probes. It is difficult to predict under stress the impact location of the second probe/dart on most systems. Training costs (initial and sustainment) are very high using tactical cartridges. The criminal justice community needs technology improvement and operational effects improvement of technology in order to influence the next generation of this class of weapons. The improvements should be science-based and incremental.

**OPERATIONAL SCENARIO(S):** Single aggressor, barricaded suspect and corrections-prisoner disorder.

**BASIC RESPONSE(S):** Mobility, physical function and motivation.

### TWG Recommended Outcomes

These systems need to be effective out to a range of 30 feet.

There should be the same effects and precision at zero feet as 30 feet.

A range-finder capability (or using a laser sheet beam rather than laser pointer) would assist officers in discharging weapons in the optimal range window (tethered systems).

A “dartless” system is desirable.

Reusable training devices/simulators would reduce training costs and enhance sustainment training.

**REQUIRED RESPONSE(S):** Immediate 100-percent immobility and/or 100-percent muscle function impaired (skeletal), 100-percent compliant immediately and full recovery within 30 minutes.

**RANKING: 4**

## Body Armor

### TWG Recommendation

Devise a Used Armor Test Protocol

In order to assure agencies and officers that armor will maintain its integrity for at least five years, the law enforcement and corrections community needs the development of a formal test protocol for used body armor. This may need to be broken into two separate issues. Concern was expressed at the February 2007 meeting about still needing protocol for armor used in the field. Consider developing a best practices guide for what departments should do for evaluating their own used armor.

### TWG Recommended Outcomes

- 1) There would be tools (standards, test methods) that law enforcement agencies could use to evaluate the ongoing ballistic performance of units of armor in field use, related back to the conditioning protocols in 0101.06.
- 2) These efforts would ultimately lead to the development of non-destructive test methods to assess the ongoing ballistic resistance of individual units of armor.

**RANKING: 5**

## Body Armor

### TWG Recommendation

Promote Development of a Lightweight, Flexible Body Armor

### Description of Issue/Requirement/Need

The law enforcement and corrections community needs a lightweight, flexible, breathable and durable vest that meets existing NIJ standards. According to the TWG, the lighter and more comfortable a vest is, the more likely an officer is to actually wear it full-time.

### TWG Recommended Outcomes

- 1) NIJ would solicit and sponsor research into new fibers, materials and construction methods that would result in 25-percent reduction in the current weight of armor at a given threat level while providing equal or improved ballistic resistance.

- 2) Armor resulting from these efforts would be worn more frequently by officers, achieving a 30-percent increase in wear rates over current levels.

**RANKING: 6**

## Pursuit Management

### TWG Recommendation

Controlling or Stopping Pursuits Using Cooperative Technologies (PMT-2007-R03)

### Description of Issue/Requirement/Need

The law enforcement community needs the ability to safely control and stop pursuits using cooperative technologies. Many original equipment and after-market systems exist that allow remote monitoring and control of a vehicle's functions. This technology is "cooperative" because the system depends on technology pre-installed on vehicles that is designed to "cooperate" with law enforcement instructions during an emergency.

The telematics technology, "OnStar," operated by General Motors, is an example of a cooperative technology that has many desired features, such as a data and voice communications link, a full-time call center, GPS tracking capability and integration with a vehicle's electronics. A system like this has the existing capability to flash the headlights and sound the horn of a fleeing vehicle as a rudimentary warning system. The potential also exists to control a vehicle's speed.

Agencies need to understand the technology and develop procedures and mechanisms to utilize those systems for public safety.

#### TWG Recommended Outcomes

Some of the operational requirements of this technology include:

- Low power consumption.
- Resistance to tampering.
- Technology acceptable to manufacturers, legislative bodies and the public.
- Accuracy of communication with the correct vehicle.
- Alternate method of identifying the target vehicle, such as GPS, in case the target vehicle's license plate has been switched or misread by an officer.
- Ability to communicate with the target vehicle and flash headlights or implement other commands within 30 seconds of initiation.
- Technology operational lifespan equal to that of the vehicle.
- Communicates with target vehicles in urban and rural areas, with minimal hindrance from bridges, buildings and terrain.
- Secure communications link.
- Call center ability to handle multiple (up to 20) pursuits at one time.
- Verification process on communication link to ensure that correct vehicle is targeted.
- Two-way communication required through communications links.
- Monitoring and an auditable trail documenting all actions required for both human and automated interfaces (to address privacy and liability issues).

**RANKING: 7**

## Biometrics

#### TWG Recommendation

Identification of People From Video and Audio Surveillance

#### Description of Issue/Requirement/Need

Law enforcement officers need the ability to identify a person through capture of their face and/or voice on audio/video devices, and the related ability to check biometric identifiers against a database. This technology could be used by criminal justice for the following activities:

- Handling school "outsider" problems (preventing unauthorized access on school campus.)
- Identifying employees and inmates moving through a secure or controlled area.
- Identifying and authorizing communications system users through voice recognition.
- Detecting altered appearance.
- Detecting gang activity
- Identifying inmate speakers during telephone conversations. Criminal justice professionals need an improved audio surveillance technology to positively identify and monitor inmates and other persons of interest during telephone conversations as well as automatically flag phrases and other parts of the recorded discussions for investigative or counter terrorism purposes.

#### TWG Recommended Outcomes

None provided.

RANKING: 8

## Corrections

### TWG Recommendation

Improved Contraband Detection Technologies

### Description of Issue/Requirement/Need

Introduction of contraband presents a serious problem for correctional facilities. Weapons, drugs and other contraband compromise the security of an institution, create black markets and negatively impact the correctional environment. In addition, staff, inmate and public safety are compromised. To combat this, corrections personnel require technologies for use at egress and ingress points that will integrate and improve existing methods of detecting a broad spectrum of contraband such as, but not limited to, metallic and non-metallic weapons, drugs, tobacco and wireless communication devices. Portal device must safely and non-intrusively detect contraband carried on the body and within body cavities, provide rapid throughput, be user friendly in operation and maintenance and most importantly be affordable enough to be a viable solution for most correctional agencies.

### TWG Recommended Outcomes

Should the technology requirement be addressed, the outcomes will be the ability to search 100 percent of all individuals entering a facility with a 90-percent accuracy (detection) rate. The proper implementation of this technology will result in a 50-percent reduction in the amount of contraband introduced into a typical correctional facility.

RANKING: 9

## Explosives

### TWG Recommendation

Vehicle Borne IEDs

### Description of Issue/Requirement/Need

Improved capabilities to neutralize vehicle borne IEDs

### TWG Recommended Outcomes

The ability to remotely deploy and execute tools capable of defeating VBIEDs with an integrated remote firing system incorporated in the tool. Collateral damage must be limited and the tool must be capable of rapid deployment.

RANKING: 10

## Community Corrections

### TWG Recommendation

Technology to Locate, Track and Communicate the Whereabouts of Predatory Offenders in All Environments

### Description of Issue/Requirement/Need

Current location tracking systems do not perform to the requirements of public safety. GPS-based systems have difficulty tracking offenders indoors, underground and anywhere the subject is beyond the "sight" of the satellite system. In addition, near real-time communications of offender location are dependent on the availability of cellular communications. Community corrections requires better location and tracking

technologies to monitor and communicate the whereabouts of predatory and violent offenders in all environments within the community. Solutions must provide cost-effective, accurate and reliable continuous monitoring and communication of whereabouts in all environments. Highly secure circumvention prevention and detection measures are also required.

#### TWG Recommended Outcomes

Should the technology requirement be addressed, the outcomes will be continuous tracking capability with 100-percent reliability outdoors and 90-percent reliability indoors with accuracy within 10 meters. Tracking would be achievable in subways and in indoor commercial buildings, precise to the building level.

**RANKING: 11**

### Sensors & Surveillance (Concealed Weapons Detection)

#### TWG Recommendation

Detect Concealed Weapons and Contraband (Corrections)

#### Description of Issue/Requirement/Need

A new technology is needed to detect small homemade or improvised weapons made from items commonly found in the correctional environment. This would include ferrous metals, non-ferrous metals, plastic, Plexiglas, wood and stainless steel.

#### TWG Recommended Outcomes

TWG members increased the priority from medium to high for this requirement. Systems mentioned above have difficulty detecting smaller objects. The Luna non-linear acoustic system is being integrated into a commercial wand to extend capability for detecting smaller objects and improve detection for non-metal materials.

**RANKING: 12**

### General Forensics

#### TWG Recommendation

Automated Fingerprint Identification Systems Interoperability

#### Description of Issue/Requirement/Need

Law enforcement requires that NIJ should examine the interoperability of AFIS and identify ways to improve information sharing between jurisdictions.

#### TWG Recommended Outcomes

While NIJ is currently funding an AFIS interoperability study, NIJ should also facilitate the development of a “universal translator” through meetings with vendors, encourage state policy changes and work with the National Institute of Standards and Technology to develop minimum standards and software for fingerprint information capture.

**RANKING: 13**

## **Explosives**

### **TWG Recommendation**

Body-Worn IEDs

**Description of Issue/Requirement/Need**  
Improved tools and technologies to detect suicide bombers.

### **TWG Recommended Outcomes**

Technologies to detect suicide bombers at a safe distance.

**RANKING: 14**

## **Electronic Crime**

### **TWG Recommendation**

Portable Digital Device Forensic Examination Hardware and Software Tools

**Description of Issue/Requirement/Need**  
Cell phones, personal digital assistants and other mobile devices are being encountered by state and local law enforcement in the course of their duties with increasing frequency. These devices are often seized as evidence in the course of criminal investigations. Most law enforcement personnel have little or no training or experience in handling and recovering data from these devices that may be of investigative value.

Additionally, there are few standards in the way cell phones and mobile devices store data. This lack of standards requires that unique hardware solutions be developed for each make and model of cell phone and mobile device available. Law enforcement needs tools, both hardware and software, to recover digital evidence from cell phones, personal data assistants and other mobile devices as well as training on cell phone and portable digital device data acquisition and forensic examination.

### **TWG Recommended Outcomes**

Grant funding solicitations to elicit proposals to develop hardware and software tools that will provide state and local law enforcement with free or very low cost tools and training to acquire digital evidence from cell phones and mobile devices and software to conduct forensic examinations on the data sets acquired from those devices. As a result of successful grant-funded projects, law enforcement will have qualified personnel to acquire all the data from cell phones and mobile devices seized as evidence, and the resources and skills to examine the acquired data for information of investigative value. Ultimately, more investigations in which cell phones and mobile devices are used to commit or facilitate criminal activity will be successfully concluded, and more perpetrators will be brought to justice.

**RANKING: 15**

## Corrections

### TWG Recommendation

Wireless Communication Detection/Defeat Technologies

#### Description of Issue/Requirement/Need

The introduction and use of unauthorized wireless communication devices creates a serious security concern for correctional facilities. This is a fairly recent and important issue for corrections as evidenced by legislation created by a number of states that makes it a felony to introduce a cell phone into a prison. Inmates use these devices to carry on criminal activities in the community, facilitate escape attempts, harass victims, intimidate staff, etc. Corrections personnel require cost-effective technology that eliminates unauthorized wireless communications and/or assists in accurate (x,y,z coordinates) location detection of a broad range of wireless communication, including, but not limited to cell phones, walkie talkies, Blackberries, Bluetooth devices and PDAs. Technology must have the capability to defeat and/or detect unauthorized wireless communication devices based on their frequency bandwidth, whether intact or broken down into their component parts and whether powered on or not, and should not interfere with desirable radio frequency devices used by staff. The defeat/detection system should be able to be integrated into a central data and communications infrastructure.

#### TWG Recommended Outcomes

Should the technology requirement be addressed, the outcomes will be a reduction in the number of unauthorized wireless communications devices introduced into a facility by 95 percent and a reduction in associated criminal activity by 95 percent.

**RANKING: 16**

## Less Lethal

### TWG Recommendation

New Calmative Agents; Calmative Agent Delivery System (LLD-2006-R05)

#### Description of Issue/Requirement/Need

The criminal justice community needs a capability to inhibit metabolic functioning of individuals and groups that is quick acting, completely reversible and has no long-term physical or psychological effects. The criminal justice community needs a method of delivery for a metabolic function inhibitor that is capable of delivering at a variety of ranges to a target of one or many.

**OPERATIONAL SCENARIO(S):** Single aggressor, barricaded suspect, hostage rescue-clearing facilities and corrections-prisoner disorder.

**BASIC RESPONSE(S):** Mobility, physical function, sense and interpret and motivation.

### **TWG Recommended Outcomes**

This technology will provide a tool with which officers can resolve hostage situations with reduced injury and death to officers, victims and subjects.

**REQUIRED RESPONSE(S):** Immediate immobilization fully recoverable in two to 30 minutes, immediate and full impairment of physical function with full recovery, immediate disruption of ability to sense and interpret information with full recovery, and immediate full compliance.

**RANKING: 17**

## **DNA Forensics**

### **TWG Recommendation**

Tools for Data Interpretation of Casework Samples

### **Description of Issue/Requirement/Need**

DNA lab analysts need a system that can perform quantitative interpretation of short tandem repeat data from mixtures of two or more individuals. It should be able to calculate ratios on three-person mixtures and should work on partial STR profiles and degraded DNA samples. It should be Web-based and compatible with laboratory information management systems.

### **TWG Recommended Outcomes**

Expedited review of DNA profiles leading to higher throughput of forensic DNA analyses.

**RANKING: 18**

## **Corrections**

### **TWG Recommendation**

Staff Identification, Location and Duress Technology

### **Description of Issue/Requirement/Need**

Correctional facilities are dangerous environments and staff injuries are common. A safer environment for officers creates better working conditions and allows an institution to operate more effectively and efficiently. Corrections staff need technology that will locate staff continuously throughout a facility in real time so that they can be aided in case of emergency. Technology shall be cost effective, non-proprietary, based on open standards, highly accurate, highly reliable, and able to be integrated into a central data and communications infrastructure.

### **TWG Recommended Outcomes**

Should the technology requirement be addressed, the outcomes will be a reduction in time needed to respond to staff emergencies by 35 percent, a 25-percent reduction in number of staff injuries, a 50-percent reduction in the number of days missed due to injury (measure for reduction in severity of injuries), a 50-percent reduction in workers compensation claims and a 10-percent increase in staff retention.



RANKING: 19

## Sensors & Surveillance (Concealed Weapons Detection)

### TWG Recommendation

Detect Large Concealed Weapons on an Individual  
(School Safety)

### Description of Issue/Requirement/Need

Law enforcement and school security officers need the ability to detect handguns being transported by students and visitors prior to their entry to a school. This technology needs to operate from a standoff distance of 15 meters to provide an early warning. It could also be used to scan areas on school property.

### TWG Recommended Outcomes

There are several commercially available imaging technologies that partially meet this requirement, but do not provide the necessary distance requirement of 15 meters. There are also several non-imaging devices that do provide the necessary distance. The TWG wants technologies that meet these requirements.

RANKING: 20

## Information-Led Policing

### TWG Recommendation

Access and Use of Positive Identification Technology  
and Standards

### Description of Issue/Requirement/Need

The criminal justice community needs the ability to use various methods to identify persons of interest in the criminal justice process and in a timely manner. The ability to access relevant databases on a national basis that contain identity data (e.g., photos, mug shots, other data) for a person of interest is desired. There exists a critical need by officers to identify individuals who are the perpetrators of crime.

### TWG Recommended Outcomes

NIJ will sponsor research and development that will lead to the introduction of a flexible, user-friendly technology with the ability to query a single or consolidated database, which can return criminal justice markers in a timely fashion. Criminal justice agencies will adopt and implement successfully piloted technologies. The technology will enhance criminal justice/citizen interactions with regard to safety, efficiency and effectiveness. The standard will address the timeliness of data provided to the consumer.

**RANKING: 21**

## Personal Protective Equipment

### TWG Recommendation

Gun-Retention Holster Standards

#### Description of Issue/Requirement/Need

The law enforcement and corrections disciplines lack established standards for gun-retention holster capability. Presently, every manufacturer makes holsters differently and they place different rating levels on their products, but there is no connection between one manufacturer's levels and the next. Safety issues include difficulty in drawing and the breakaway factor.

#### TWG Recommended Outcomes

- 1) An objective, testable standard for gun-retention holster capability.
- 2) Reduction in loss of control of weapon due to a direct relationship with the holster.

**RANKING: 22**

## Personal Protective Equipment

### TWG Recommendation

Multi-Threat Protection Gloves

#### Description of Issue/Requirement/Need

Law enforcement and corrections professionals need workday gloves that are cut, puncture and pathogen resistant, and can be decontaminated for reuse. These gloves should provide full dexterity and tactility, and be affordable enough

that an officer can purchase them for his or her own use if an agency does not have the funds to provide them. Additional dexterity and tactility issues must be incorporated as well.

#### TWG Recommended Outcomes

Measurable improvements resulting in reduction of hand injuries and bloodborne pathogen exposures by officers.

**RANKING: 23**

## Communications Technologies

### TWG Recommendation

Computer-Aided Design Interfaces

#### Description of Issue/Requirement/Need

- The future of mobile data is indeterminate at the present time.
- A need exists for the exchange of data between the command center and the field for law enforcement.
- A need exists for a single, multifunctional wireless data technology that will seamlessly switch between operational modes using various wireless protocols, especially for IP-based applications.
- For instance, a flexible, integrated software defined radio modem with multiband/multiprotocol technologies for data applications.
- This need specifically negates the need to utilize a modem chassis that switches between one or more radios that operate in specific bands.

### TWG Recommended Outcomes

A technology that will seamlessly switch between multiple applications/technologies for best performance.

A network that provides access to multiple sources of data.

Specific outcomes include:

- a) More power efficiency.
- b) Better heat management/circulation.
- c) Less required intervention/integration.

**RANKING: 24**

## Explosives

### TWG Recommendation

Electronic Countermeasure

### Description of Issue/Requirement/Need

Standards or characterization of electronic countermeasure equipment or tools for use by public safety agencies.

### TWG Recommended Outcomes

A complete characterization and standardization of ECM tools that can be used to defeat radio controlled improvised explosive devices. This should contain minimum acceptable performance requirements and test methods. Emphasis should be on interoperability and compatibility so that multiple squads can work safely and effectively in the same area without causing dangerous situations from interference.

**RANKING: 25 (tie)**

## Biometrics

### TWG Recommendation

Expedited Capture of Latent and Rolled Equivalent Fingerprints and Palm Prints

### Description of Issue/Requirement/Need

Criminal justice professionals need technologies to speed up the collection of latent and rolled fingerprints and palm prints. Examples of uses for this technology include:

- Inmate processing.
- Border security checks with automated criminal justice information system.
- Background security checks for employee clearance.

Criminal justice professionals need a device that can collect latent fingerprints and palm prints in the field and convert them to a digital format for comparison in an automated fingerprint identification system.

The TWG noted that no deployed commercial off-the-shelf technology currently exists to perform rapid (10 rolled in under 15 seconds) collection of finger and palm prints.

### TWG Recommended Outcomes

None provided.

**RANKING: 25 (tie)**

## Geospatial Technologies

### TWG Recommendation

Tools and Technologies That Provide Three-Dimensional Geocoding and Mapping for Large Buildings, Including Those With No Electronic Computer-Aided Design Files

### Description of Issue/Requirement/Need

There is a lack of tools and technologies available that provide three-dimensional geocoding and mapping within large buildings for use by law enforcement for emergency response as well as analysis purposes. Mapping to the real vertical location is currently constrained by a lack of existing data, inability to capture Z attributes and the lack of necessary 3-D base layers to map against. When responding to emergency calls, responders need the ability to accurately locate places within expansive buildings. For analysis purposes, this means that the where and how of crime that increasingly occurs in large buildings and housing developments cannot be viewed accurately with existing GIS models. While conceptual 3-D geocoding models and technological solutions are emerging, there are a host of related issues that make this technology inaccessible to many local agencies. These limitations include the cost in time, resource intensive data collection processes and data quality/management issues. 3-D geocoding tools, particularly those with flexibility and generalizability and based on open-source or freely distributed software, could be a valuable asset for a variety of public safety first responders. Such technologies would augment

disaster preparedness and response capabilities by exploiting evolving technologies. This is a national problem, affecting not only law enforcement but also fire rescue and other emergency services. The need for 3-D geocoding exists in urban cores with large office and apartment buildings and other types of large buildings. The need also exists in rural areas with college campuses and large industrial facilities. Medium to large agencies and educational institutions could use the technology. This is a particularly acute problem for jurisdictions in which CAD drawings are not available or not easily retrievable by first responders. The problem is widespread because most urban areas have multi-floor buildings. This problem impacts absolutely every city/urban area with a population of more than 150,000, and the problem is increasing, as more large and high rise buildings are being constructed.

### TWG Recommended Outcomes

Addressing this problem could help not only in providing emergency response, but help reduce crime and disorder in buildings such as schools, jails, etc. that house numerous people by mapping crime, people, etc. The problem impacts any entrance and exit strategies law enforcement would need to enter a building during a disaster or major incidents such as a school shooting or hostage situation. Police and other public safety are less efficient and effective in responding to crime and managing problems that are occurring within these large buildings, while crime analysts are also limited in their ability to perform 3-D pattern analysis. Thus, the context of crime cannot be accurately assessed and crime prevention nor abatement programs properly devised or evaluated.

# LECTAC History

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Since its inception in the mid-1970s, the advisory body now known as LECTAC has provided valuable advice to NIJ and the law enforcement and corrections community. The council has not only helped bring new technologies into practice, but also helps to ensure that NIJ does not pursue inappropriate technologies.

## History

LECTAC has a long history that began nearly 30 years before the establishment of the TWG process. In 1977, the National Institute of Law Enforcement and Criminal Justice, NIJ's predecessor agency, recognized that the law enforcement community needed independent, accurate information and technical assistance to help with the equipment procurement process. NILECJ funded the International Association of Chiefs of Police to establish and operate the Equipment Technology Center to provide this information and assistance; prior to its establishment, law enforcement agencies solely relied on the untested claims of product manufacturers and/or the other opinions of consumers. (Experience had demonstrated that more often than not, neither of these sources provided reliable information.) In order to ensure that the ETC testing programs met law enforcement's needs and requirements, NILECJ and IACP established the National Advisory Committee for Law Enforcement Equipment and Technology. IACP appointed NACLEET members, based on their knowledge and expertise in specific areas, with the approval of the Law Enforcement Assistance Administration and NILECJ.

In 1979, Congress passed the Justice System Improvement Act of 1979, signed into law by President Jimmy Carter; this act converted NILECJ into NIJ. NIJ issued a new grant to the IACP that converted the ETC into the Technology Assistance Program and created the Technology Assessment Program Information Center to serve as the clearinghouse for law enforcement technology and equipment information. To reflect the changes, NACLEET was renamed the Technology Assessment Program Advisory Council.

In 1985, NIJ awarded the operation of TAP and TAPAC to another grantee, ending eight years of operation by IACP. Recognizing that IACP remained an integral resource for the law enforcement community, a seat for an IACP representative was established on TAPAC. Then, as now with LECTAC, many sitting TAPAC members also belonged to IACP.

As a result of the Violent Crime Control and Law Enforcement Act of 1994, NIJ converted TAPAC into the National Law Enforcement Technology Center, which served as a hub for several regional centers throughout the country in addition to maintaining its previous testing and information center resources. These NLETC regional centers were established as "centers of excellence" in various technology focus areas and also acted as regional interfaces for law enforcement agencies. Once

again, to reflect the changes in the program, TAPAC was renamed, this time as the Law Enforcement Technology Advisory Council.

In 1995, NIJ, recognizing that the corrections community also had an urgent need for technical assistance for equipment and technology procurement, renamed NLETC the National Law Enforcement and Corrections Technology Center and broadened the focus of the program to include the corrections community. LETAC became LECTAC and was restructured into two committees for law enforcement and corrections. Both committees had parallel subcommittee structures and reported to an executive committee, comprised of the chairs of the respective subcommittees. The various regional centers established their own regional advisory councils.

In 1997, the LECTAC Executive Committee, in an effort to reduce overlapping (and sometimes conflicting) requirements from the two committees, as well as to include input from the regional advisory councils, requested that NLETC-National initiate an effort to consolidate and streamline LECTAC and the regional advisory councils. The result, approved by the LECTAC Executive Committee in April 1998, consolidated the law enforcement and corrections committees into one body. The subcommittee structure was realigned into nine technology focus areas and each subcommittee has representatives from both law enforcement and corrections agencies. To improve communication among the regional centers, their advisory councils and LECTAC, the directors of each NLETC regional center and the chair of each regional center advisory council were made a part of the LECTAC Executive Committee.

LECTAC's structure continued to experience minor adjustments over the next several years. In late 2004, NIJ initiated a comprehensive restructuring of LECTAC and the process by which technology requirements were identified and prioritized. The subcommittee structure of LECTAC was disbanded and replaced with 17 Technology Working Groups, each one corresponding to an active technology portfolio within NIJ. The responsibilities for managing these TWGs were assigned to the various NLETC Regional Centers who were tasked with a TWG's corresponding technology portfolio. The TWGs were then tasked with developing the specific technology requirements for their areas of expertise.

LECTAC was restructured into a smaller (approximately 35-40 member) executive advisory body, tasked with reviewing and prioritizing the inputs received from the TWGs. LECTAC is administered by NLETC-National, located in Rockville, Md., and meets at least annually to review the TWGs' recommendations.

Whether known as NACLEET, TAPAC, LETAC, or LECTAC, the mission and purpose has remained consistent over the years: to provide NIJ with practitioner-based input on the technology needs of state and local law enforcement, corrections, crime laboratory and criminal justice agencies.

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Through this process, LECTAC seeks to further the identification, development and implementation of new technologies that advance the operations of criminal justice agencies and ensure the safety of law enforcement and corrections personnel in the performance of their duties.

# Law Enforcement and Corrections Technology Advisory Council

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# About the National Law Enforcement and Corrections Technology Center System

The NLECTC system exists to support the nation's structure of state and local law enforcement and corrections. The United States has more than 18,000 law enforcement agencies, 50 state correctional systems and thousands of prisons and jails. The fragmented nature of law enforcement and corrections impedes the dissemination of valuable new information, fosters a patchwork marketplace that discourages the commercialization of new technologies and underscores the need for uniform performance standards for equipment and technologies.

NIJ's Office of Science and Technology created NLECTC in 1994 as a national system of technology centers that serve as clearinghouses of information and sources of technology assistance and that also attend to special needs, including technology commercialization and standards development. The NLECTC system's purpose is to determine the needs of the law enforcement and corrections communities and assist them in understanding, using and benefitting from new and existing technologies that, increasingly, are vital levers of progress in criminal justice. NIJ/OS&T and the NLECTC system are the only current programs developed by the federal government that focus solely on the development and transfer of technologies to state and local law enforcement and corrections. The system currently consists of a national center, five regional centers, several specialty centers and four Centers of Excellence. Also contributing to the initiatives of the center system is the National Institute of Standards and Technology/Office of Law Enforcement Standards. The centers are co-located with a host organization or agency that specializes in one or more areas of technology research and development.

The National Center, located in Rockville, Md., is the system's information hub. Regional centers are currently located in Alaska, California, Colorado, New York and South Carolina. Specialty centers located around the country deal with border matters (California and Texas), rural law enforcement issues (Kentucky) and standards and testing (Maryland). The Centers of Excellence specialize in communications technologies; forensics; sensors, surveillance and biometrics; and weapons and protective systems. Each center shares roles and responsibilities with the other centers and has distinctive characteristics. All are focused on helping law enforcement and corrections take full advantage of technology's rapidly growing capacity to serve the purposes of crime control and the criminal justice system.

Each NLECTC center has a regional advisory council of law enforcement and corrections officials. Together, the advisory councils help to keep the NLECTC system attentive to technological priorities and the needs of law enforcement and corrections and to link the end user with the developer to create technologies that adequately meet operational requirements and establish which potential technologies should be pursued for development.

To receive more information or to add your name to the NLECTC mailing list, call (800) 248-2742 or (301) 519-5060, or write:

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