

Smart Gun Q and A

What is “smart gun?”

Smart guns are a seamless, transparent technology solution that will allow a weapon to only be fired by a recognized and authorized user. This technology is being developed to reduce the number of law enforcement officers killed annually with their own firearm: FBI data show that over the past 10 years one in eight officers killed in the line of duty was disarmed and killed with their own gun. In that same time period, an additional 113 officer's weapons were stolen.

The need for and applicability of this technology is described in an NIJ-funded research document issued by Sandia National Laboratories in 1996. The report, *Smart Gun Technology Project Final Report*, studied the problem of police firearm take-aways, identified the law enforcement requirements for smart gun technology, and investigated, evaluated, prioritized, and demonstrated the most promising “off-the-shelf” technologies available. Examples of these technologies, which could be adapted for smart gun use include radio frequency, voice recognition, biometrics, and touch memory technologies. Many firearms manufacturers and other technology industries are conducting their own research and development in these areas, independent of the availability of NIJ funds.

How does smart gun differ from other gun safety devices, such as triggerlock?

Typically, trigger locks are an external locking mechanisms that are attached to an unloaded weapon and are intended to prevent the loading and firing of the weapon. Most trigger locks warn users that they should not be placed on a loaded firearm, as there is the potential of accidental discharge during installation or removal. Trigger locks also require increased time to remove the lock and render the weapon operational. This poses a grave danger for law enforcement officers who typically, except during practice and qualifications, do not know when they will need their firearm to defend their life or that of a citizen.

When will smart gun be ready for the commercial market?

NIJ's work in the smart gun area has focused on developing smart gun technology for law enforcement use. The Smith & Wesson and FN Manufacturing projects will help advance the baseline for smart gun technology. Once operational prototypes are developed, the guns will undergo extensive testing to satisfy the performance expectations and needs of the law enforcement community. The evaluations will include a vulnerability assessment, environmental testing, performance testing (repetitive firing, drop safety, functional requirements, and drop function) and take-away scenarios to determine if the weapons will function in the field environment as intended.

NIJ also expects to develop a voluntary performance standard for smart gun use, similar to those it has developed for other law enforcement equipment such as personal body armor, weapons, protective gloves, and communications equipment. This standard will provide manufacturers

and law enforcement agencies with guidance about minimal acceptable levels of the technology's performance. NIJ expects this research, development, pilot testing, and standards development process to take approximately three to five years.

What is the Justice Department's role in developing this sort of technology? What is the history of NIJ's work in this area?

The smart gun is being developed by the NIJ's Office of Science and Technology (OS&T), which has as its charter to provide federal, state, and local law enforcement and corrections agencies access to the best technologies available and help them develop capabilities essential to improving efficiency and effectiveness. One of the six primary focal points of OS&T's work is to develop technologies to prevent crime and protect law enforcement officers.

In 1994, NIJ sponsored research by the Sandia National Laboratories to determine the viability of a suitable smart gun for law enforcement applications. In 1996, a \$500,000 award was made to Colt's Manufacturing, to further refine its prototype smart gun. The smart gun Colt's developed focuses on radio frequency identification technology. When energized, the Colt's prototype emits a radio signal. A small, wrist transponder is worn by the user. The wrist transmitter receives the signal and returns back to the gun a coded radio signal. The return signal prompts the removal of a blocking pin within the gun's firing mechanism, enabling the gun to fire. If an individual were to take the gun away from the individual wearing the wristband, the gun would not fire for that user.

Why isn't NIJ providing continuation funds to Colt?

Colt's Manufacturing elected not to request additional funds to support its smart gun project because it felt that the amount of funding available from NIJ in the near term would not support significant improvements in the current weapons speed and reliability.

Where did the funds come to make grants to Smith & Wesson and FN Manufacturing?

NIJ issued awards to Smith & Wesson and FN Manufacturing after their proposals, which were submitted in response to NIJ's 1999 Science and Technology Solicitation, were reviewed by an independent peer panel.

How many other gun companies submitted applications to NIJ?

NIJ has been contacted by a number of firearms manufacturers and technology developers interested in working on the development of smart gun technologies. A total of 4 Smart Gun proposals were received in 1999 in response to NIJ's solicitation.

Will NIJ fund other smart gun research and development grants in the near future?

The Administration has requested \$10 million in FY 2001 to expand development, testing, and replication of smart gun technologies. The program will reduce the cost to human life resulting from the use of weapons being taken from their proper owners. Once fully developed and tested, smart gun technologies will allow law enforcement officers' weapons to be more safely and reliably secured, and will help prevent accidental deaths to children who have access to a firearm. NIJ proposes to use the funding to:

- issue a solicitation for additional smart gun research and development.
- provide continuation funding to Smith & Wesson and FN Manufacturing;
- develop standards for smart gun technology use;
- undertake vulnerability studies and evaluation of technologies that could be adapted for use in a smart gun; and
- develop a standard for gun locks;

For more information about NIJ's work on smart gun, please contact Liz Pearson at the Office of Justice Programs', Office of Congressional and Public Affairs at 202/307-0703.



National Institute of Justice

Office of Science and Technology

810 Seventh Street, NW

Seventh Floor

Washington, DC 20531

Telephone: (202)307-0645

Fax: (202) 307-9907

FAX COVER SHEET

TO:

Dianne

FAX #:

202-456-7028

FROM:

Wendy Howe

DATE:

3/7/00

SUBJECT:

Chronology of NIS

TOTAL NUMBER OF PAGES INCLUDING COVER:

4

COMMENTS:

Chronology of National Institute of Justice (NIJ) Support for the Smart Gun Project

- Late 1992 The Technology Assessment Program Advisory Council (now know as the Law Enforcement and Corrections Technology Advisory Council) indicates growing concern over the number of officers killed with their own weapons, so NIJ identifies development of a Smart Gun as a key priority. The Advisory Council is composed of nationally recognized active local, State, and Federal law enforcement and corrections professionals that identifies the equipment and technology needs for the criminal justice community.
- 1993 Philip Gackle, Sandia National Laboratories, whose interest in Smart Guns was sparked by an article by Abraham N. Tennenbaum (former police lieutenant) urging the development of a Smart Gun, is invited to make a presentation at the annual meeting of the Technology Assessment Program Advisory Council (now known as the Law Enforcement and Corrections Technology Advisory Council) regarding the feasibility of developing a "smart gun". This firearm would be able to distinguish between an authorized user and someone who is not authorized to fire the gun.
- Although the Council was concerned about introducing power sources and electronics into the already complicated semiautomatic pistol, they were intrigued by the concept and recommended further exploration by NIJ.
- 1993 Congresswoman Patricia Schroder asks NIJ to develop a program for the development of a Smart Gun and puts language in the House Authorization Bill requiring the Department of Defense to fund the NIJ development of such a weapon. The Senate did not support this funding, but the language attracted the attention of officials at Sandia National Laboratories.
- 1993 In response to NIJ's general research solicitation, Sandia National Laboratories submitted a proposal to identify the law enforcement requirements for Smart Gun technology, to evaluate existing technology that could be used in a Smart Gun, and to develop proof-of-concept prototypes of the technology. The proposal was evaluated through the NIJ peer review process and was highly recommend for funding.
- Early 1994 An award for \$620,000 was made to Sandia National Laboratories to undertake the smart gun project. The first step was to produce a report on the background and history of the problem of police firearm take-away, identify the extent to which officers are assaulted and killed with their own firearms, and to identify the requirements officers would want in a smart gun. Gathering of the necessary information was conducted through research of the FBI's Uniform Crime Reports, *Officers Killed and Assaulted*, and through written surveys and interviews with officers at national meetings and conferences. This research yielded a preliminary report detailing the scope of the problem with firearm take-away and the identification of officer requirements for a smart gun.

- 1994-1995 During this time frame, the project team from Sandia continued to collect information on officers' requirements for the operation of the smart gun and assessed the technical and practical feasibility of 14 technologies ranging from simple mechanical devices to sophisticated electromagnetic concepts. Subsequently, five models of proof-of-principal smart gun devices were built to illustrate the strengths and vulnerabilities of each technology under consideration.
- 1995-1996 These smart gun prototypes were demonstrated at a variety of law enforcement forums, from small advisory groups to major, national meetings, e.g. National Sheriffs' Association and the International Association of Chiefs of Police, in a continuing effort to identify operation strengths and weaknesses of the technologies. A final report was issued by Sandia in May 1996 detailing the results of the project.
- 1996 NIJ released a general solicitation for proposals in the area of law enforcement and corrections technology development. Colt's Manufacturing submitted a proposal for further smart gun development and the delivery of an operational prototype.
- April 1997 NIJ awarded a cooperative agreement to Colt's Manufacturing for \$500,000 to further develop and manufacture 2 working prototype smart guns using radio frequency technology (the most promising commercially available technology identified by Sandia during its project)
- October 1998 Colt's Manufacturing will deliver 2 working prototype Smart Guns to NIJ as required by the cooperative agreement. After completion of electronic, environmental, and ballistic testing through NIJ's center system and its Office of Law Enforcement Standards, NIJ will embark on an evaluation program to validate the performance of the radio frequency technology.
- October 1998 Two local Washington, DC, area police academies express interest in participating in controlled field test of the Smart Gun. Preliminary meeting held to discuss the capabilities, needs, and development of scenarios.
- 1999 NIJ will procure 20 custom made Smart Guns for field testing at local police academies. To validate the capabilities and consistent performance of the weapons, NIJ will negotiate with local police academies to have the firearms tested and evaluated by police armorers, recruits, and SWAT members. NIJ will work with the agencies to develop adequate evaluation scenarios to determine the ease of operation, ergonomics of the weapon, and performance during controlled take-away situations. The evaluators will report any performance problems to NIJ including malfunctions of the mechanics of the firearm (slide, magazine, firing capabilities, etc.) and the components that operate the radio frequency and transponder.
- January 1999 Police academy field evaluation project is postponed because of mechanical and reliability difficulties experienced with integrating the Smart Gun technology into a semiautomatic pistol.

May 1999 Colt's Manufacturing is granted a no-cost extension for delivery of prototype Smart Gun.

July 1999 Colt's Manufacturing is granted a six month no-cost extension for delivery of prototype Smart Gun.

December 99 Colt's Manufacturing is granted a 3 month no-cost extension for deliver of prototype Smart Gun.

February 2000

Clinton Presidential Records Digital Records Marker

This is not a presidential record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

This marker identifies the place of a publication.

Publications have not been scanned in their entirety for the purpose of digitization. To see the full publication please search online or visit the Clinton Presidential Library's Research Room.



JULY 2000

NATIONAL INSTITUTE OF JUSTICE
JOURNAL

Making Guns Safer

by Lauren R. Taylor

Transnational Crime Challenge

by James O. Finckenauer

Police Discretion and Mentally Ill Persons

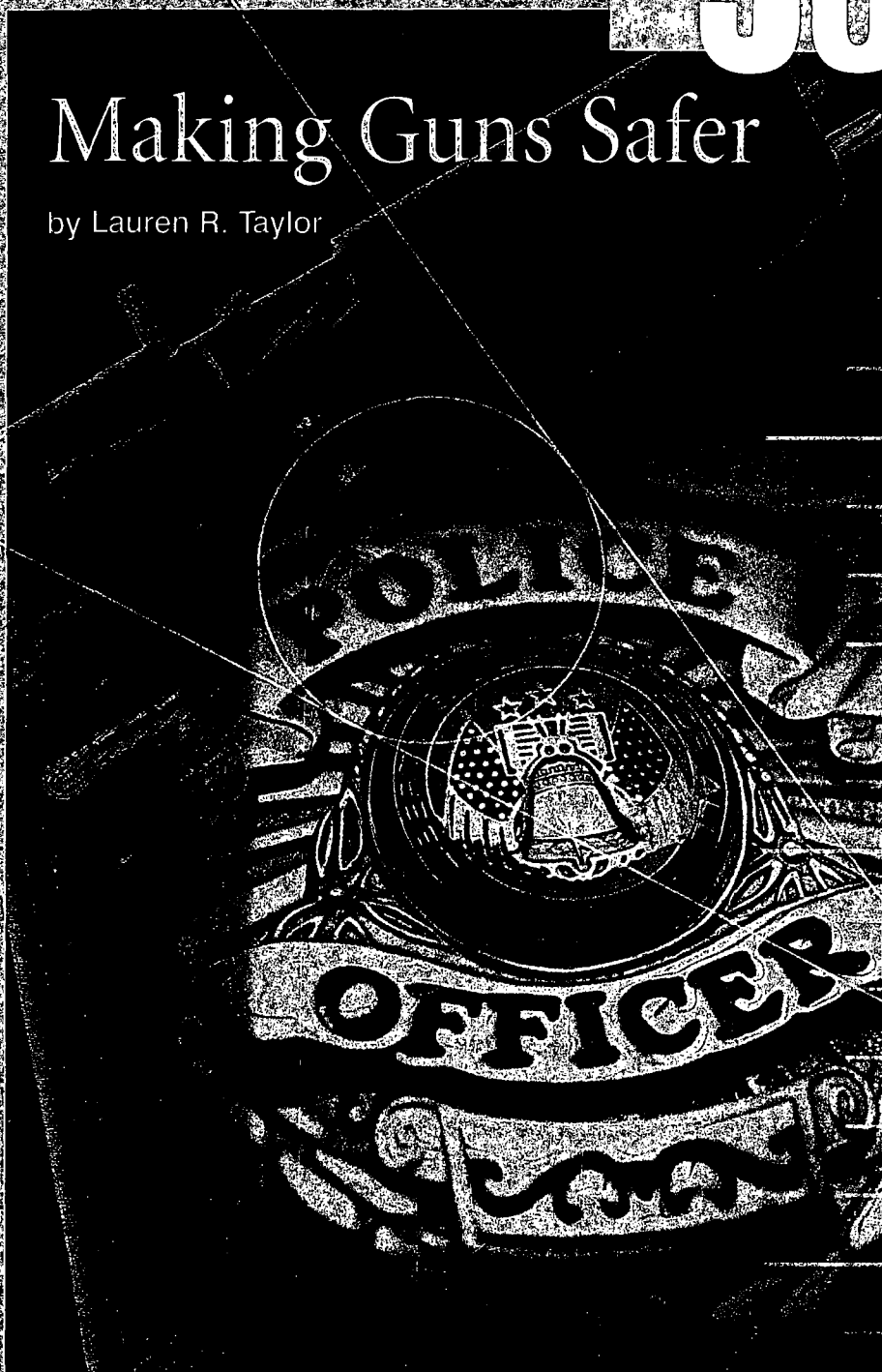
by Linda A. Teplin

Prison-Based Drug Treatment

and

At-A-Glance

- Police Management and Citizen Perceptions
- Victim Services for Women
- Performance Measures and Police
- Young Female Offenders
- Drug Testing and Young Offenders





U.S. Department of Justice

Office of the Associate Attorney General

Deputy Associate Attorney General

Washington, D.C. 20530



CHARLES A. SIMON
DEPUTY ASSOCIATE ATTORNEY
GENERAL
OFFICE OF THE ASSOCIATE
ATTORNEY GENERAL
(202) 305-8283 (OFFICE)
(202) 307-3904 (FAX)

TO:

LEANNE / DEANNE

FAX #:

456 7028

DATE:

PHONE #:

OF PAGES:

6

(INCLUDING COVER)

COMMENTS:

-DRAFT-

EMBARGOED FOR RELEASE
9:00 A.M. SATURDAY, MAY 13

NIJ
202/307-0703

**JUSTICE DEPARTMENT TO FUND ADDITIONAL SMART GUN
RESEARCH AND DEVELOPMENT**

Washington, D.C. -- President Clinton announced today that the Justice Department will make grants to two gun manufacturers -- Smith & Wesson and FN Manufacturing, Inc. -- for the research and development into "smart gun" technologies. Smart guns, which are firearms that can distinguish an authorized user from someone who is not supposed to fire the weapon, show tremendous promise in reducing the cost to human life when weapons are taken intentionally or accidentally from their proper owner. The President made the announcement during his weekly radio address Saturday morning.

"We are pleased to announce that these two leaders in the gun industry, FN Manufacturing, Inc. and Smith & Wesson, are working with us to expand what we know about smart gun technologies," said President Clinton. "With this additional investment into smart gun research and development, we will be closer to having more tools to keep guns out of the wrong hands and keep our children safe. This new partnership with the gun industry is one of the greatest gifts we can give the moms of America for Mother's Day."

Smart gun research and development is being supported by the Justice Department's National Institute of Justice (NIJ), in response to Federal Bureau of Investigation (FBI) data that shows that over the past 10 years, 57 police officers were slain with their own weapons. An additional 113 weapons were stolen from law enforcement officers during this same time period. "Developing smart gun technologies is crucial in preventing needless law enforcement deaths,"

said Attorney General Janet Reno. "We have a responsibility to do whatever we can to protect the men and women who put their lives on the line each day to protect our communities. I am so pleased that we have the opportunity to further research these promising approaches so that once these technologies are fully developed, law enforcement officers' weapons will be more safely and reliably secured."

NIJ, with assistance from scientists at the Sandia National Laboratories in Albuquerque, New Mexico, has evaluated a variety of technologies that may be adaptable in creating effective "smart guns", such as radio frequency, voice recognition, biometrics, and touch memory technologies. The Smith & Wesson project will support the test the feasibility and functionality of an electronic fire handgun with code based combination lock; a separate fingerprint module that communicates with an electric fire handgun; and an analysis of existing Smith & Wesson technologies and design of the next generation prototype. FN Manufacturing, Inc. will use its NIJ grant award to further the research, development, and testing of its smart gun prototype, which uses embedded microelectronics to disable the firearm from use by an unauthorized user.

To augment and expand smart gun research and development, the Administration has requested \$10 million in FY 2001 to expand development, testing, and replication of smart gun technologies. With these funds, NIJ plans to:

- provide continuation funding to Smith & Wesson and FN Manufacturing;
- develop standards for smart gun technology use;
- undertake vulnerability studies and evaluation of technologies that could be adapted for use in a smart gun;
- develop a standard for gun locks; and
- issue a solicitation to other gun manufacturers for additional smart gun research and

development.

NIJ, the Justice Department's research and evaluation arm, supports research, evaluation, and demonstration programs, the development of technology, and both national and international information dissemination. For additional information about NIJ and its programs visit its site on the World Wide Web at: <http://www.ojp.usdoj.gov/nij>. Information about other Office of Justice Programs (OJP) bureaus and program offices is available at www.ojp.usdoj.gov. Media should contact OJP's Office of Congressional and Public Affairs at 202/307-0703.

###

For additional information contact Liz Pearson at pager # tbd.

**OFFICE OF JUSTICE PROGRAMS
NATIONAL INSTITUTE OF JUSTICE
GRANT AWARD ANNOUNCEMENT**

The Development of an Authorized User-Only Handgun

AWARDED TO: Smith & Wesson Company
2100 Roosevelt Avenue
Springfield, Massachusetts 01102

AMOUNT: \$300,000*

PROJECT DESCRIPTION: Prior to receipt of this award, Smith & Wesson designed and built electronically fired prototype pistols that include both pin code and fingerprint user access control. Since the size of the circuit board with current fingerprint identification technology is too large to fit inside a handgun, the fingerprint system is contained in a separate module. The grant award from NIJ will allow Smith & Wesson to test the feasibility and functionality of the following technologies:

- an electronic fire handgun with code based combination lock;
- a separate fingerprint module that communicates with an electric fire handgun; and
- an analysis of the existing Smith & Wesson technology and design of the next generation prototype.

The results of this testing would contribute to the design an of integrated electronic firing, biometrically secure smart gun prototype. Additional funding would allow Smith & Wesson to build and test several iterations of the hardware and to fund the research efforts required to miniaturize the electronics so that a completely integrated biometric system fits inside the handgun.

LOCAL CONTACT: Kevin Foley
413/747-3321

OJP CONTACT: Liz Pearson
202/307-0703

*This award amount may change slightly after final financial review.

May 2000

**OFFICE OF JUSTICE PROGRAMS
NATIONAL INSTITUTE OF JUSTICE
GRANT AWARD ANNOUNCEMENT**

Safe Gun Technology

AWARDED TO: FN Manufacturing, Inc.
797 Clemson Road
Columbia, SC 29229

AMOUNT: \$300,000*

PROJECT DESCRIPTION: This project will provide for further advances in the research and development of FN's Safe Gun prototype, which uses embedded microelectronics to disable the firearm from use by an unauthorized user. Through appropriately programmed weapons to suit differing law enforcement agency requirements, ultrasonics and computer chip devices will limit the use of the weapon to approved persons, thereby eliminating firing of such weapons by persons having stolen or otherwise removed the weapon from authorized law enforcement personnel.

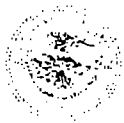
Initial funding will support a feasibility analysis report, which will include a general survey of existing technologies and an evaluation of these concepts and their implications on the gun's future design; the assembly of a prototype for functional requirements analysis; and a failure mode and effects report. An additional \$1.2 million will be needed to produce a fully functional law enforcement weapon for evaluation.

LOCAL CONTACT: Jeffrey R. Rankin
803/736-0533

OJP CONTACT: Liz Pearson
202/307-0703

*This award amount may change slightly after final financial review.

May 2000



U.S. Department of Justice

Office of the Associate Attorney General

Deputy Associate Attorney General

Washington, D.C. 20530



CHARLES A. SIMON
DEPUTY ASSOCIATE ATTORNEY
GENERAL
OFFICE OF THE ASSOCIATE
ATTORNEY GENERAL
(202) 305-8283 (OFFICE)
(202) 307-3904 (FAX)

DATE: 5-11-00TO: LEANNE / DEANNEFAX #: 456-7028

PHONE #: _____

OF PAGES: 4 (INCLUDING COVER)

COMMENTS:

NOT FOR PRESS PURPOSES

Smart Gun Q and A

What is "smart gun?"

Smart guns are a seamless, transparent technology solution that will allow a weapon to only be fired by a recognized and authorized user. This technology is being developed to reduce the number of law enforcement officers killed annually with their own firearm. FBI data show that over the past 10 years one in eight officers killed in the line of duty was disarmed and killed with their own gun. In that same time period, an additional 113 officer's weapons were stolen.

The need for and applicability of this technology is described in an NIJ-funded research document issued by Sandia National Laboratories in 1996. The report, *Smart Gun Technology Project Final Report*, studied the problem of police firearm take-aways, identified the law enforcement requirements for smart gun technology, and investigated, evaluated, prioritized, and demonstrated the most promising "off-the-shelf" technologies available. Examples of these technologies, which could be adapted for smart gun use include radio frequency, voice recognition, biometrics, and touch memory technologies. Many firearms manufacturers and other technology industries are conducting their own research and development in these areas, independent of the availability of NIJ funds.

How does smart gun differ from other gun safety devices, such as triggerlock?

Typically, trigger locks are an external locking mechanisms that are attached to an unloaded weapon and are intended to prevent the loading and firing of the weapon. Most trigger locks warn users that they should not be placed on a loaded firearm, as there is the potential of accidental discharge during installation or removal. Trigger locks also require increased time to remove the lock and render the weapon operational. This poses a grave danger for law enforcement officers who typically, except during practice and qualifications, do not know when they will need their firearm to defend their life or that of a citizen.

When will smart gun be ready for the commercial market?

NIJ's work in the smart gun area has focused on developing smart gun technology for law enforcement use. The Smith & Wesson and FN Manufacturing projects will help advance the baseline for smart gun technology. Once operational prototypes are developed, the guns will undergo extensive testing to satisfy the performance expectations and needs of the law enforcement community. The evaluations will include a vulnerability assessment, environmental testing, performance testing (repetitive firing, drop safety, functional requirements, and drop function) and take-away scenarios to determine if the weapons will function in the field environment as intended.

NIJ also expects to develop a voluntary performance standard for smart gun use, similar to those it has developed for other law enforcement equipment such as personal body armor, weapons, protective gloves, and communications equipment. This standard will provide manufacturers and law enforcement agencies with guidance about minimal acceptable levels of the technology's

performance. NIJ expects this research, development, pilot testing, and standards development process to take approximately three to five years.

What is the Justice Department's role in developing this sort of technology? What is the history of NIJ's work in this area?

The smart gun is being developed by the NIJ's Office of Science and Technology (OS&T), which has as its charter to provide federal, state, and local law enforcement and corrections agencies access to the best technologies available and help them develop capabilities essential to improving efficiency and effectiveness. One of the six primary focal points of OS&T's work is to develop technologies to prevent crime and protect law enforcement officers.

In 1994, NIJ sponsored research by the Sandia National Laboratories to determine the viability of a suitable smart gun for law enforcement applications. In 1996, a \$500,000 award was made to Colt's Manufacturing, to further refine its prototype smart gun. The smart gun Colt's developed focuses on radio frequency identification technology. When energized, the Colt's prototype emits a radio signal. A small, wrist transponder is worn by the user. The wrist transmitter receives the signal and returns back to the gun a coded radio signal. The return signal prompts the removal of a blocking pin within the gun's firing mechanism, enabling the gun to fire. If an individual were to take the gun away from the individual wearing the wristband, the gun would not fire for that user.

Why isn't NIJ providing continuation funds to Colt?

Colt's Manufacturing elected not to request additional funds to support its smart gun project because it felt that the amount of funding available from NIJ in the near term would not support significant improvements in the current weapons speed and reliability.

Where did the funds come to make grants to Smith & Wesson and FN Manufacturing?

NIJ issued awards to Smith & Wesson and FN Manufacturing after their proposals, which were submitted in response to NIJ's 1999 Science and Technology Solicitation, were reviewed by an independent peer panel.

How many other gun companies submitted applications to NIJ?

NIJ has been contacted by a number of firearms manufacturers and technology developers interested in working on the development of smart gun technologies. A total of 4 Smart Gun proposals were received in 1999 in response to NIJ's solicitation.

Will NIJ fund other smart gun research and development grants in the near future?

The Administration has requested \$10 million in FY 2001 to expand development, testing, and replication of smart gun technologies. The program will reduce the cost to human life resulting from the use of weapons being taken from their proper owners. Once fully developed and tested, smart gun technologies will allow law enforcement officers' weapons to be more safely and reliably secured, and will help prevent accidental deaths to children who have access to a firearm. NIJ proposes to use the funding to:

- issue a solicitation for additional smart gun research and development.
- provide continuation funding to Smith & Wesson and FN Manufacturing;
- develop standards for smart gun technology use;
- undertake vulnerability studies and evaluation of technologies that could be adapted for use in a smart gun; and
- develop a standard for gun locks;

For more information about NIJ's work on smart gun, please contact Liz Pearson at the Office of Justice Programs', Office of Congressional and Public Affairs at 202/307-0703.