“SECURES®, Austin, Texas, Demonstration Results”

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ABSTRACT

The Law Enforcement technology development community has a growing interest in the technologies associated with gunshot detection and localization. These interests revolve around community-oriented policing. Technologies of interest include those associated with muzzle blast and bullet shockwave detection and the inter-netting of these acoustic sensors with electro-optic sensors. To date, no one sensor technology has proven totally effective for a complete solution. PSI has a muzzle blast detection and localization product which is wireless, highly mobile and reconfigurable, with a user-friendly laptop processor and display unit, which completed a one-year demonstration in Austin, Texas on July 6, 2002. This demonstration was conducted under a Cooperative Agreement with the National Institute of Justice and in cooperation with the Austin Police Department. This paper will discuss the details of the demonstrations, provide a summarized evaluation, elucidate the lessons learned, make recommendations for future deployments and discuss the developmental directions indicated for the future.

Keywords: Mobile, Wireless, Muzzle blast detection, Localization, Laptop processor/display unit

1. INTRODUCTION

Planning Systems Incorporated (PSI) was awarded a Cooperative Agreement Grant entitled, “SECURES® Urban Gunshot Detection System Demonstration at Austin, Texas”, (Grant #2000-9204-VA-IJ), in the amount of \$770,000 on 29 June 2000. The effort included a six-month manufacture and test phase and a year-long demonstration in Austin, Texas.

This paper will endeavor to describe many of the details of the eighteen-month effort, including:

- Implementation issues
- Data collection and analysis procedures
- Operational results observed
- Summary of lessons learned
- Recommendations for future applications

A most thorough demonstration period was concluded on 6 July 2002, with the material to be used in the final report received at the end of August 2002. This demonstration project was successfully concluded on 31 August 2002.

2. SECURES® / AUSTIN DEMONSTRATION OVERVIEW

The project was designed in two parts, the first was the technical deployment and the second was the assessment of the police use.

A. Technical Framework

The technical framework included:

- Determination of the deployment location in coordination with the Austin Police Department (APD), three locations were evaluated, the one selected by the APD was statistically the “highest crime against person” area;
- Determination of which utility poles to mount the sensor units and associated scheduling in coordination with Austin Utility;

- Determination of the location of the base station receiver antenna, computer equipment, and which city local area network (LAN) to use in coordination with the City of Austin LAN Administration;
- Determination of the proper location of the laptop display in the APD Dispatch Center;
- Conduct of RF surveys to ensure line-of-sight communication from the sensor units to the base station receiver antenna on the Waller Creek Building.

The following figures (Figures 1 – 3) indicate the decisions made. Figure 4 is the demonstration schedule generally adhered to.

Figure 1: SECURES® Implementation Site in Austin, TX (directly east of the I-35 Expressway from 5th to 15th Streets)

Figure 2: SECURES® Equipment Implementation Overview

Figure 3: SECURES® typical deployment scheme and pictures of the implementation atop the Waller Creek Building

Figure 4: SECURES® Austin Demo Schedule Major Milestones

B. Assessment Framework

The assessment framework was developed by the University of New Orleans, Center for Society, Law and Justice in coordination with APD. The following summarizes the approach.

Overall Project Aim and Goals: The overall aim of the project was to assess the applicability of the SECURES® gunshot detection in the Austin Police Department and Austin Community. To achieve this broad aim the following goals were defined:

1. Implement SECURES® within the Austin Police Department;
2. Provide training to the APD related to the use of SECURES® to support the program;
3. Provide data to an evaluation team to objectively assess the impact of the SECURES® technology; and
4. Work with this evaluation team to help assess the technology in its application within Austin.

Assessment Strategy: The general strategy to be proposed to the evaluation team to be selected by NIJ included:

- The process of implementation of a complex and new technology into the realities of a working police department; and
- The impact of the SECURES® technology on the agency's broadly understood crime fighting capacity.

Major Aims of the Assessment:

- Aim One: To describe the process of implementation of the SECURES® system within Austin: key to achieving this aim will be to document the types of factors that might effect the outcome of the experiment including organizational variables, changes in assignment, shifts in priorities, etc.
- Aim Two: To assess some of the major effects of the system upon police operations, crime, and community satisfaction within Austin; essential to achieving this aim is collecting data related to police performance that might change were SECURES® to have a strong impact upon police operations.
- Aim Three: To analyze the costs/benefits associated with the implementation of the SECURES® technology: what are some of the implementation costs in relationship to benefits.
- Aim Four: To define a policy framework to help law enforcement administrators effectively implement this type technology in their agencies and assess its utility to crime fighting operations that facilitates future uses.

CSLJ Role: The Center for Society, Law and Justice was tasked to develop but not actually execute the research design that provides the basis for the performance assessment of the system. This development created the foundation of the ability to complete the performance assessment. The task of actual assessment was to be assigned to a *third-party* evaluation entity to be named by NIJ.

Assessment Framework: The information for the assessment will flow from raw data stored by the department and from interviews conducted based on the Austin SECURES® Interview Matrix (see Figure 5). How the technology affects crime and the community is dependent not only on the accuracy and effectiveness of the system and its software, but on the way the information is actually used during the implementation. For example, if the SECURES® generated calls are assigned a low priority by the dispatching system, many of the potential benefits from rapid response and information development perspectives will be lost. Therefore, the evaluation must measure implementation process and organizational acceptance as well as technical effectiveness. As a result, a number of considerations and specific target assessment issues must be considered when developing the framework for the assessment. Specifically, the evaluation must include the following:

- Process Evaluation Considerations;
- Outcome Evaluation Considerations;
- System Accuracy Factors;
- Police Workload Effects;
- Response Time Effects;
- Usefulness in COP/POP Strategy;
- Attitude Factors;
- Policy and Procedure Factors;
- Crime Prevention Effects;

- Community Effects; and
- Computer and Recorded Data Collection Factors.

	Patrol 1	Field Super visors 2	Folw.-Up Invest. 3	MIS 4	Dispatch 5	Exec. Staff 6	Crime Anal. 7	Area Residents 8	Area Leaders 9	Criminal Element 10
Response System 1	X	X		X	X	X	X	X	X	X
Response Actions 2	X	X	X	X	X	X	X	X	X	X
Site Activities 3	X	X			X	X	X	X	X	X
Follow-up Activities 4		X	X		X	X	X	X	X	X
End Result of Event 5	X	X	X		X	X	X	X	X	X
Deterrent Issues 6	X	X	X			X	X	X	X	X
Crime Analysis 7		X	X	X	X	X	X			
SECURES® Technical Capacity 8				X	X	X				
SECURES® Software 9				X	X	X	X			
Problem Solving 10	X	X	X	X	X	X	X	X	X	
Community Response 11	X	X	X	X	X	X	X	X	X	

Figure 5: Austin SECURES® Interview Evaluation Matrix

Recommended Assessment Schedule and Milestones: Figure 6 depicts this recommendation.

Figure 6: Recommended Assessment Schedule and Milestones

3. DATA COLLECTION AND ANALYSIS PROCEDURES

A. Technical Data

A remote (internet access) data collection process was instituted in coordination with the City of Austin's Information Systems Department (ISD) and the APD Dispatch Office.

The following steps were instituted:

1. The SECURES® base station receiver antenna was located on the roof of the City's Waste and Water Department's building (Waller Creek Building). Significant was the fact that the City's ISD's municipal LAN management and computer operations were located on the ninth floor.
2. The SECURES® base station computer was co-located with the City's, allowing for joint monitoring and calls for maintenance from ISD personnel.
3. ISD and PSI coordinated the interfacing of the SECURES® base station computer to the LAN connected to the Dispatch Office.
4. The SECURES® APD Dispatch Office display was co-located with the dispatch operator for the Central East Police District, where the demonstration area was embedded. Figures 7 and 8 show the laptop, and representative screens, and the operator tools provided are discussed.
5. In order to make the SECURES® base station computer internet accessible, ISD made available an existing "DMZ" for access outside of the City's firewall, in which, PSI arranged for computer security. PSI then monitored and collected technical data on the sensor unit and laptop display operations status, and collected the data for technical evaluation. PSI's Reston office laptop display was the same as located in the Dispatch Office.

The SECURES® Dispatcher's screen provided powerful tools that enabled the Dispatcher to detect and monitor events, collect data, and dispatch patrol officers to the precise location of a gunshot.

- Provides audio and visual alerts within seconds after the shot is fired;
- Automatically zooms to and displays a gunshot's location on an aerial photograph;
- Displays the gunshot's date, time and geographical coordinates;
- Displays the location of the pole units that detected the shot;
- Automatically identifies the address nearest to the gunshot; and
- Displays a cumulative history of gunshot events

Figure 7: Base Station Laptop at Dispatch Office

Figure 8: Detailed Base Station Laptop Displays

The following Dispatcher's tools provided assistance to the dispatcher in sending a patrol officer to the precise location:

- Arbitrary address look-up;
- High resolution aerial photographs with pan and zoom;
- Simultaneous display of additional graphical overlays, including roadways, contour lines, and buildings; and
- On-screen distance measurements from shot location to arbitrary reference points

B. Operational Data

UNO/CSLJ was responsible for setting up the data collection processes, which included APD operational training, APD process change and liaison activities between PSI and APD.

Data Collection: Interviews were conducted to gather information both to guide the implementation of the project and to serve process evaluation requirements. All interviews were conducted with the full consent of the APD in accordance with APD needs. Both individual and group brainstorming session interviews were conducted within APD.

Interviews created the potential for bottom-up and top-down buy-in for the project. The process began with the interview of senior managers and spread to include the cadre of personnel involved with the SECURES® implementation and its day-to-day operations. They focused on policy development and problem solving issues as well as project familiarization. Training and policy recommendations built on information obtained during interviews. Post

equipment installation interviews ensured the system was performing as desired and contributed to the potential Community Oriented Policing (COP) problem-solving capacities that arose during the project. Interviews conducted regarding implementation included the following specific topics:

- General layout of the City of Austin, and more specifically the targeted area to include residential population density, general topography, and crime trends;
- Current protocols/experiences with citizen reported gunshots to include response priority, numbers, locations and times;
- CAD infrastructure and dispatch procedures;
- Current response time to gunshot incidents (actual, projected, desired);
- Information regarding gunshot incidents that is considered of value to include all relevant crime mapping and crime analysis data;
- Test relationship to potential crime mapping for analysis and potential problem solving;
- Desired location parameters dispatched reference an incident;
- Community involvement;
- Test disclosure issues;
- Live fire testing; and
- System reliability and accuracy.

Formal Training: Training sessions were conducted just prior to final installation of the SECURES® equipment. Sessions included a cross section of APD personnel with direct and support responsibilities regarding the test as determined in cooperation with APD. The focus and topics for the training were drawn from the interviews and APD policy concerns. The sessions were held to a minimum and designed using adult learning strategies. Additional training sessions were provided based on developed needs throughout the project.

Coordination of SECURES® Implementation: CSLJ supported PSI installation activities and APD installation concerns. Presence at community meetings and other functions directly related to the implementation was provided as guided by APD. CSLJ internal liaison and training helped coordinate and support the implementation process. Policy changes needed by the project were minimized. Past experience has shown, however, that SECURES®-type systems generate a large increase in potential calls for service which entails important policy considerations. Changes were made in instances that maximized the opportunity for success in the use of SECURES® within reasonable bounds as determined by APD. Liaison and interviews created a wealth of information that allowed for APD policy development and adjustment. A preliminary list of policy concerns were as follows:

- Dispatch process;
- Call priority;
- Response procedures;
- Investigative procedures; and
- Event documentation.

Over a short period of time, the SECURES® process was integrated and became transparent to normal police standard operating procedures.

Research Information: CSLJ made assurances that every effort was made to use existing APD systems in the collection of the data and information required to assess the performance of SECURES®. This information also served the purpose of assisting the APD with maintaining the operational effectiveness of SECURES®. Information retained for research purposes were direct products of the interview and policy development processes. Additional specific data and information collection within the designed CSLJ framework by the NIJ designated project assessor/evaluation team never materialized. The recommended timetable for assessment activities is identified in Figure 9.

Figure 9: Austin SECURES® Design Period Overview

4. CONCLUSIONS

This section will attempt to summarize the cogent information needed to permit replication of the SECURES® / Austin demonstration design and implementation. It is important to quote a past International Association Chiefs of Police (IACP) President, Chief William B. Berger, in an IACP article for “The Police Chief” magazine stating, to wit, “benefits of any new technology tools will not be realized until operational processes are re-engineered.” PSI and UNO/CSLJ certainly learned this to be true in the Austin implementation experience.

A. Implementation Issues

Because SECURES® is a mobile, wireless and independent system not requiring substantial interface with existing systems, a number of implementation elements have been identified and documented. The final reconciliation of these diverse, but integratable, elements will ultimately determine the cost of the project – both near and far term. These implementation elements include:

- Dispatch/911 interface operations;
- District police officer operations;
- City LAN support availability;
- City operations facilities availability;
- Utility company support availability; and
- Proposed sensor locations.

B. Operational Results Observed/Reported

The day-to-day results were documented at the Dispatch Center using APD standard operating procedures with the exception that SECURES® identified events were annotated with an attribution to a SECURES® report. Until late December 2001, the project officer assigned at the Central East Police substation was reducing these officer reports to a matrix form for easy review. Figure 10 is an example of the compiled reporting being tracked.

The SECURES® system went operational in Austin on July 6, 2001. In the intervening period ending in December 2001, SECURES® reported several significant events that demonstrated its potential as a valuable tool in community policing.

- July 23: "Officer responding to a SECURES® activation spotted a vehicle leaving the location, stopped it for a traffic violation, the driver was arrested on outstanding warrants and a pistol was found in the car"
- August 7: "Officers used SECURES® sensors lack of activation to prove no gunshot was fired in response to a citizen's false complaint."
- August 11: "Officer responding to a SECURES® activation determined that a funeral director had neglected to notify the APD that a twenty-one gun salute was to be rendered at the Texas State Cemetery."
- October 17: "SECURES® identified two shots emanating from a speeding vehicle providing direction and rate-of-advance. Report was confirmed by four 911 calls and two witnesses."

Case #	Date	Time	Location	DEORS?	# Shots	Source	Confirmed	Witness	Arrest
01-1820873	7/1/2001	12:07	1216 Inks Av	yes	couple	unk	n/a	heard	no
01-1840741	7/3/2001	13:02	1408 E. 11th St	yes	3	gas motor	yes	yes	n/a
01-1931564	7/12/2001	21:44	Chicon/8th St	yes	2	unk	no	no	no
01-1931570	7/12/2001	21:47	Chicon/8th St	no	unk		duplicate		
01-1931574	7/12/2001	21:47	2002 E. 9th St	no	unk	fireworks	no	unk	no
01-1941590	7/13/2001	21:49	1115 E. 10th St	yes	4	fireworks	yes	yes	no
01-1941621	7/13/2001	22:09	1010 E. 7th St	yes	5	fireworks	yes	yes	no
01-1980009	7/15/2001	0:08	1401 E. 12th St	yes	unk	fireworks	yes	yes	no
01-1981411	7/15/2001	22:40	1143 Northwestern	yes	unk	fireworks	yes	yes	no
01-1981351	7/17/2001	19:47	1302 Salina St	yes	unk	unk	n/a	unk	no
01-2010287	7/20/2001	4:34	314 Chicon	yes	1	gun	no	yes	no
01-2011473	7/20/2001	21:10	1701 E. 17th St	yes	1	fireworks	yes	yes	no
01-2011499	7/20/2001	21:27	1121 Lawson La	yes	unk	fireworks	yes	no	no
01-2030497	7/22/2001	9:07	210 Elkhart St	"no"	-	-	-	-	-
01-2030500	7/22/2001	9:08	1900 E. 4th St	yes	unk	burglary	yes	no	no
01-2031450	7/22/2001	21:22	1012 E. 15th St	yes	unk	fireworks	no	heard	no
01-2040217	7/23/2001	4:24	1160 Alamo St	yes	unk	fireworks	yes	yes	no
01-2040218	7/23/2001	4:26	1901 E. MLK	yes					felon w/firearm; responding to SECURES activation, officer spotted vehicle leaving location, stopped for traffic violation, arrested driver for warrants & found pistol in car
01-2080793	7/25/2001	13:16	Lawson & Rosewood	yes	unk	fireworks	yes	yes	fireworks on a metal slide
01-2081179	7/25/2001	18:08	1195 Angelina	yes	unk	unk			no
01-2081181	7/25/2001	18:08	1195 Angelina	duplicate					
01-2071292	7/28/2001	18:56	1801 Pennsylvania	yes	unk	backfire-car	yes	yes	no
01-2081706	7/27/2001	23:33	Peoples St/Poquito	yes	3	fireworks	yes	yes	no
01-2110153	7/30/2001	2:14	1902 Rosewood	yes	unk	unk	no	no	no
01-2110569	7/30/2001	11:04	1109 Chicon	yes	unk	unk	no	no	no
01-2121634	7/31/2001	22:44	1140 Poquito	yes	several	fireworks	yes	yes	no
01-2141767	8/3/2001	23:20	1103 Olive St	yes	unk	fireworks	yes	yes	no
01-2181367	8/6/2001	19:24	802 Onion	yes	1	unk	unk	no	no
01-2191048	8/7/2001	17:52	915 Juniper	yes	zero**	false report	yes	yes	no
01-2231071	8/11/2001	16:10	1311 E. 7th St	yes	3	gun	yes	yes	no-21 gun salute for funeral
01-2291627	8/17/2001	21:52	1717 Rosewood Av	yes	unk	unk	no	no	no
01-2450575	9/2/2001	8:12	1624 E. 4th St	yes			no	yes	no-witness ID'd and advise was in the area, nothing heard for 15mins prior to ofc arrival
01-2701024	9/27/2001	15:05	Comal St/Penn. Av	yes		fireworks	yes	no	no
01-2751276	10/2/2001	18:27	1204 E. 10th St	yes		fireworks	no	no	no
01-2821735	10/9/2001	21:54	1401 E. 12th St	yes	unk	unk	no	no	no
**footnote officers used secures to prove no gunshot fired in this citizen's false complaint									

Figure 10: Compiled Reporting Example

Beginning in January 2002, and until the completion of the Demonstration in August 2002, a Dispatch supervisor took over the task of keeping SECURES® records, both through providing PSI a copy of the complete officer reports and providing a summary of events chart. Figures 11 - 15 are five fairly representative examples of reports for this period. No comparable significant event(s) resulted during the January 2002 to August 2002 period, as to the previous year.

While officers experienced concern about SECURES® sensitivity to fireworks, which caused PSI to conduct modifications to correct in January 2002, in fact, reading through the dispatch reports show indications of gunshot events not subsequently resolved.

07/15/2002 13:00	A U S T I N P O L I C E D E P A R T M E N T		PAGE: 1
INCIDENT REPORT NUMBER: OF 02 1560184		AGENCY: AP	INTERNAL USE
OCCURRED BETWEEN: DATE: 06/05/2002 TIME: 0258 AND: 06/05/2002 TIME: 0258		TITLE CODE: 3446 SHOTS FIRED 4021 SECURES	
REPORTED: DATE: 06/05/2002 TIME: 0258			
LOCATION: 309 E 8TH ST AUSTIN, TX 78701			
COUNTY: TRAVIS			
SECT/DIST: G 02	CENSUS TRACT: 11.00		
PRA: 381			
PREMISE: 0103 STREET, PUBLIC ROAD			
EVENT ORIGIN: CAD		SOLVABILITY: NOT ENOUGH DESC/EVIDENCE	
EVENT STATUS: OPEN			
CAD TITLE CODE:		PRIMARY UNIT:	
DISPOSITION:		OFFICER:	
DISPATCHED:			
ARRIVED:			
CLEARED:			
ENTERED BY: AP 3943 HERRING, JONATHAN		DATE: 06/05/2002 TIME: 0258	
ASSIGNED TO: AP 3943 HERRING, JONATHAN		DATE: 07/08/2002 TIME: 0849	

PRESS RELEASE NARRATIVE:			
ENTERED: 06/05/2002 02:58 BY: AP 3943 HERRING, JONATHAN			
WHILE ON PATROL, I WROTE A SHOTS FIRED REPORT.			

INVESTIGATIVE NARRATIVE:			
ENTERED: 06/05/2002 02:58 BY: AP 3943 HERRING, JONATHAN			
WHILE ON PATROL, I WAS DISPATCHED TO A SECURE'S CALL STATING THAT SHOTS HAD BEEN FIRED. UPON ARRIVAL ONSCENE, I WAS NOT FLAGGED DOWN BY ANYONE AND DID NOT OBSERVE ANYTHING ABNORMAL. I SPOKE WITH A CITIZEN WALKING ON THE STREET WHICH WHO STATED THAT HE DID NOT HEAR ANY LOUD BANGS OR ANY SHOTS.			
NOI			

ROUTED FROM P390 TO PDJY AP0861			

Figure 11: Sample Officer Incident Report

07/15/2002 13:01	A U S T I N P O L I C E D E P A R T M E N T		PAGE: 1
INCIDENT REPORT NUMBER: OF 02 1660563		AGENCY: AP	INTERNAL USE
OCCURRED BETWEEN: DATE: 06/15/2002 TIME: 0818 AND: 06/15/2002 TIME: 0818		TITLE CODE: 4021 SECURES	
REPORTED: DATE: 06/15/2002 TIME: 0818			
LOCATION: 1600 BLK PENNSYLVANIA AV AUSTIN, TX 78702			
COUNTY: TRAVIS			
SECT/DIST: C 04	CENSUS TRACT: 8.04		
PRA: 413			
PREMISE: 0103 STREET, PUBLIC ROAD			
EVENT ORIGIN: CAD		SOLVABILITY: NOT ENOUGH DESC/EVIDENCE	
EVENT STATUS: OPEN			
CAD TITLE CODE: 9999 INVALID		CAD TITLE CODE	
DISPOSITION: 1		PRIMARY UNIT: C203	
DISPATCHED: 06/15/2002 0818		OFFICER: AP 2639 DOMEL, JEFFREY	
ARRIVED: 06/15/2002 0818			
CLEARED: 06/15/2002 0851			
ENTERED BY: AP 2639 DOMEL, JEFFREY		DATE: 06/15/2002 TIME: 0818	
ASSIGNED TO: AP 2639 DOMEL, JEFFREY		DATE: 07/12/2002 TIME: 0941	

PRESS RELEASE NARRATIVE:			
ENTERED: 06/15/2002 08:18 BY: AP 2639 DOMEL, JEFFREY			
WHILE ON PATROL I WAS DISPATCHED TO THE AREA OF PENNSYLVANIA AND SALINA REFERENCE A SHOTS FIRED RECORDED BY THE SECURES SYSTEM. NO EVIDENCE FOUND.			

INVESTIGATIVE NARRATIVE:			
ENTERED: 06/15/2002 08:18 BY: AP 2639 DOMEL, JEFFREY			
ON THIS DATE I RECEIVED A CALL OF A SHOTS FIRED IN THE AREA OF PENNSYLVANIA AND SALINA. SECURES SYSTEM RECORDED A SHOT ON THE ROOF OF KEALING JR HIGH AT 1607 PENNSYLVANIA. SCHOOL FOUND TO BE SECURE. RESIDENTS IN THE AREA ADVISED THAT ELECTRICAL POWER WAS OUT AND THAT A TRANSFORMER IN THE 1100 BLK LEONA HAD BLOWN OUT.			
NOT A SHOTS FIRED CALL.			

ROUTED FROM P390 TO PDJY AP0861			

Figure 12: Sample Officer Incident Report

07/15/2002 13:01	AUSTIN POLICE DEPARTMENT INCIDENT REPORT NUMBER: OF 02 1670521	AGENCY: AP	PAGE: 1 INTERNAL USE
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OCCURRED BETWEEN: TITLE CODE: 4021 SECURES
 DATE: 06/16/2002 TIME: 0522
 AND: 06/16/2002 TIME: 0522
 REPORTED:
 DATE: 06/16/2002 TIME: 0523

LOCATION: 1600 E 10TH ST
 AUSTIN, TX 78702
 COUNTY: TRAVIS
 SECT/DIST: C 04 CENSUS TRACT: 9.01
 PRA: 411
 PREMISE: 0103 STREET, PUBLIC ROAD

EVENT ORIGIN: CAD SOLVABILITY: NOT ENOUGH DESC/EVIDENCE
 EVENT STATUS: OPEN

CAD TITLE CODE: 3446 SHOTS FIRED
 DISPOSITION: 1 PRIMARY UNIT: C703
 DISPATCHED: 06/16/2002 0523 OFFICER: AP 4394 KILCOLLINS, ERIC
 ARRIVED: 06/16/2002 0526
 CLEARED: 06/16/2002 0541

ENTERED BY: AP 4394 KILCOLLINS, ERIC DATE: 06/16/2002 TIME: 0523
 ASSIGNED TO: AP 4394 KILCOLLINS, ERIC DATE: 07/12/2002 TIME: 1430

PRESS RELEASE NARRATIVE:
 ENTERED: 06/16/2002 05:23 BY: AP 4394 KILCOLLINS, ERIC
 ON 06/16/02 THERE WAS A SECURES HIT IN THE 1600 BLOCK OF E 10TH ST.

INVESTIGATIVE NARRATIVE:
 ENTERED: 06/16/2002 05:23 BY: AP 4394 KILCOLLINS, ERIC
 ON 06/16/02 I WAS DISPATCHED TO 1600 E 10TH ST FOR A SHOTS FIRED CALL THAT WAS REPORTED BY THE SECURES SYSTEM.
 IT WAS A DARK AND STORMY NIGHT. IT WAS RAINING FAIRLY HEAVY AND THERE WAS A LOT OF THUNDER AND LIGHTING IN THE AREA. NOTHING WAS FOUND.
 NOI.

ROUTED FROM P390 TO PDJY AP0861

Figure 13: Sample Officer Incident Report

07/15/2002 13:02	AUSTIN POLICE DEPARTMENT INCIDENT REPORT NUMBER: OF 02 1761129	AGENCY: AP	PAGE: 1 INTERNAL USE
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OCCURRED BETWEEN: TITLE CODE: 4021 SECURES
 DATE: 06/25/2002 TIME: 1706
 AND: 06/25/2002 TIME: 1706
 REPORTED:
 DATE: 06/25/2002 TIME: 1706

LOCATION: 1611 E 9TH ST
 AUSTIN, TX 78702
 COUNTY: TRAVIS
 SECT/DIST: C 04 CENSUS TRACT: 9.01
 PRA: 411
 PREMISE: 0103 STREET, PUBLIC ROAD

EVENT ORIGIN: CAD SOLVABILITY: NOT ENOUGH DESC/EVIDENCE
 EVENT STATUS: OPEN

CAD TITLE CODE:
 DISPOSITION: PRIMARY UNIT:
 DISPATCHED: OFFICER:
 ARRIVED:
 CLEARED:

ENTERED BY: AP 4623 WEGNER, EWA DATE: 06/25/2002 TIME: 1706

PRESS RELEASE NARRATIVE:
 ENTERED: 06/25/2002 17:06 BY: AP 4623 WEGNER, EWA
 ON 6-25-02 I WAS DISPATCHED TO 1600 BLK OF E 9TH ST ON A SECURES CALL.

INVESTIGATIVE NARRATIVE:
 ENTERED: 06/25/2002 17:06 BY: AP 4623 WEGNER, EWA
 ON 6-25-02 I WAS DISPATCHED TO 1611 E 9TH ST ON A SECURES SHOTS FIRED CALL.
 I FOUND NO ONE IN THE AREA UPON ARRIVAL. NOTHING LOOKED OUT OF THE ORDINARY.
 NOI.

ROUTED FROM P390 TO AP0861

Figure 14: Sample Officer Incident Report

07/15/2002 13:03	A U S T I N P O L I C E D E P A R T M E N T		PAGE: 1
INCIDENT REPORT NUMBER: OF 02 1821505		AGENCY: AP	INTERNAL USE
OCCURRED BETWEEN:		TITLE CODE: 4021 SECURES	
DATE: 07/01/2002	TIME: 2220		
AND: 07/01/2002	TIME: 2220		
REPORTED:			
DATE: 07/01/2002	TIME: 2220		
LOCATION: 1708 PENNSYLVANIA AV			
AUSTIN, TX 78702			
COUNTY: TRAVIS			
SECT/DIST: C 04	CENSUS TRACT: 8.04		
PRA: 413			
PREMISE: 0103 STREET, PUBLIC ROAD			
EVENT ORIGIN: CAD		SOLVABILITY: NOT ENOUGH DESC/EVIDENCE	
EVENT STATUS: OPEN			
CAD TITLE CODE: 9999 INVALID CAD TITLE CODE			
DISPATCHED: 1	PRIMARY UNIT: C603		
DISPATCHED: 07/01/2002	2220	OFFICER: AP 4608 GRIFFIN, DEREK	
ARRIVED: 07/01/2002	2226		
CLEARED: 07/01/2002	2252		
ENTERED BY: AP 4608 GRIFFIN, DEREK		DATE: 07/01/2002 TIME: 2220	

PRESS RELEASE NARRATIVE:			
ENTERED: 07/01/2002 22:20 BY: AP 4608 GRIFFIN, DEREK			
ON 7-1-2002, I TOOK A SHOTS FIRED REPORT AT 1708 PENNSYLVANIA AVE. THAT THE SECURES SYSTEM PICKED UP.			

INVESTIGATIVE NARRATIVE:			
ENTERED: 07/01/2002 22:20 BY: AP 4608 GRIFFIN, DEREK			
ON 7-1-2002 AT APPROXIMATELY 10:20 PM, I RESPONDED TO 1708 PENNSYLVANIA AVE., IN REFERENCE TO A SHOTS FIRED CALL PICKED UP BY THE SECURES SYSTEM AND A RESIDENT AT 1708 PENNSYLVANIA AVE.			
THE RESIDENT AT 1708 PENNSYLVANIA STATED SHE WOKE UP AND HEARD ONE SHOT FIRED AND LOUD MUSIC COMING FROM AN UNIDENTIFIED VEHICLE LEAVING THE AREA.			
THE AREA WAS CHECKED AND THERE WERE NO SIGNS OF ANY SHELL CASINGS IN THE AREA.			
NOI.			

Figure 15: Sample Officer Incident report

C. Synopsis of the Interim Evaluation Report

An Interim Evaluation Report on the implementation of the SECURES® gunshot detection system demonstration in Austin, was developed by Dr. Peter Scharf and Mr. George Bradley, Center for Society, Law and Justice, University of New Orleans, and submitted to NIJ on May 6, 2002.

The report indicated that the demonstration had been quite successful in indicating the potential for use of SECURES® in community policing, however, there had not been sufficient gunshot incidents to prove a valid statistical inference toward the overall utility of SECURES® as a tool to assist in reducing the gun violence in at-risk neighborhoods, in general.

Salient points of the SECURES® operation in Austin to that date, included:

- System operates reliably, and as advertised, such that the Austin Police Department has been able to take ownership and conduct operations without the need for continuous support;
- Potential has been demonstrated in four different circumstances (one arrest), and even in the case of illegal explosions has accurately indicated the locations; and
- System is easily amenable to sensitivity modifications to customize for target location.

Recommendations of the Interim Evaluation Report, included in part:

- The promise of the system suggests the need for further experimentation;
- A broader scope experiment is required in higher crime/shooting event locations; and
- Consistent patrol validation needs to be attempted.

In summary, the Report strongly recommended additional deployment in cities with higher incidents of gun violence to continue refining the use of a gunshot detection tool to aid in community policing. The entire Interim Evaluation Report document is on file at the National Institute of Justice.

D. Lessons Learned/Recommendations

While the gunshot detection technology ownership was taken by the APD and SECURES® was demonstrated to be able to operate reliably, efficiently, and accurately; the ability to totally inculcate the SECURES® contribution to community policing operational processes was less successful. The latter was due to a number of circumstances, including:

- Dynamic changes in APD hierarchical leadership and district police, due to a rapid expansion of the police force because of community growth and the events of September 11, 2001;
- SECURES® sensitivity to illegal explosives causing a predisposition of patrolmen to discount SECURES® reports (expressed in interviews, but not reflected in the dispatch reports of the individual policeman);
- Lack of significant gunfire events in the Austin Demonstration Area (the Central East Project Officer and Sergeants pointed out that assistance in pursuit of suspects in a larger number of gunfire events would have obviated the officer's discontent with illegal explosion detection); and
- Lack of timely training to new, oncoming police officers not particularly aware of SECURES® or its purpose or the improvements made since January 2002.

The single most important recommendation to be made is to attach "ownership" of SECURES® to that special police unit mobilized to fight crime in high risk neighborhoods. This will entail SECURES® to be highly mobile and used in a tailored, customized manner dependent upon the nature of the "strike force" tasking and the area to be surveilled.

5. ACKNOWLEDGEMENTS

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