NLECTC
Sensor, Surveillance, and Biometric Technologies Center of Excellence

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DEVICES AND LOCATIONS FOR THE OPERATION OF THROUGH THE WALL SENSORS (TWS) IN SUPPORT OF NIJ AWARD 2010-IJ-CX-K024

The National Institute of Justice (NIJ) Sensor, Surveillance and Biometric Technologies (SSBT) Center of Excellence (CoE) is requesting FCC permission to operate Through the Wall Sensors (TWS) for testing and evaluation, field performance, and demonstration purposes in fulfillment of NIJ Award Number 2010-IJ-CX-K024. FCC regulations restrict the use of these devices to law enforcement applications, the providing of emergency services, and necessary training. FCC permission is requested because neither SSBT CoE personnel nor the intended activities fall under these categories.

About the SSBT CoE

The NIJ SSBT CoE is a center within the National Law Enforcement and Corrections Technology Center (NLECTC) System. The Center provides scientific and technical support to NIJ's R&D efforts. The Center also provides technology assistance, information, and support to criminal justice agencies. The Center supports the sensor and surveillance portfolio and biometrics portfolio. The Centers of Excellence are the authoritative resource within the NLECTC System for both practitioners and developers in their technology area(s) of focus. The primary role of the Centers of Excellence is to assist in the transition of law enforcement technology from the laboratory into practice by first adopters.

TWS Tasking

The objective of this task is to evaluate the performance of a TWS prototype in laboratory and operational environments, and to investigate the operational use of TWS capabilities in law enforcement (LE). These objectives will provide guidance on how to integrate the emerging technology into existing operations and systems, as well as provide feedback to R&D efforts at AKELA with respect to hardware revisions targeted at improving user operation. Emphasis will be placed on TWS use by state and local LE practitioners.

TWS Devices of Interest

Three FCC certified devices and one experimental device are intended to be operated at various locations. The Xaver 100 (FCC ID - A42X100F), Xaver 400 (FCC ID - A42X400F), and the Range-R (FCC ID - YKD-25TWD3000; Order DA 09-2482) are FCC certified devices, and the ASTIR by AKELA is currently operated under an experimental license (0054-EX-ML-2012). Sixteen (16) locations have been identified as potential sites for operation of the TWS in order to facilitate NIJ task requirements.

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Devices, Identifiers, and FCC filings

Device Name	Model Number	Manufacturer	Frequency	Power (ERP)	FCC Certification Number
Range-R	Range-R (See DA 09-2482)	L-3 Communications CyTerra (Grantee Code: YKD)	3101 MHz to 3499 MHz	14.09 dBm	YKD-25TWD3000 (Waver DA 09-2482)
Xaver 100	AT0023	Camero Tech (FRN: 0021317409)	2495 MHz to 6101 MHz	-44.15 dBm	A42X100F
Xaver 400	AT0028 Rev 1.02	Camero Tech (FRN: 0021317409)	2436 MHz to 6097 MHz	-44.15 dBm	A42X400F
ASTIR	AR506P-3G	AKELA (Grantee Code: ZZM; Call Sign WF 2XRB)	3101 MHz to 3499 MHz	24.84 dBm	Experimental Device (File Number 0054-EX-ML-2012)

Planned SSBT CoE Activities

The SSBT CoE will conduct testing and evaluation of the TWS to evaluate the technical performance, characteristics, and limitations of the devices. This work will focus on engineering metrics, with operation conducted in controlled environments and locations, both indoors and outdoors. Operation will be conducted by skilled engineers and scientists with a background in sensors, testing best practices, and scientific methodology. Supporting locations include:

Name	Address	Coordinates	Radius (km)
ManTech International Corporation	1000 Technology Dr, Fairmont, WV 26554	39° 25' 53", 80° 11' 37"	1
Azimuth, Inc	3741 Morgantown Industrial Park, Morgantown, WV 26501	39° 36' 32", 79° 58' 33"	0.1
Private Residence	3462 Fairmont Rd, Morgantown WV 26501	39° 36' 7", 80° 4' 37"	1
Commercial Business	401 Walnut Ave, Fairmont WV 26554	39° 28' 51", 80° 8' 57"	0.1

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The second type of operation will involve field assessment of TWS in law enforcement scenarios and environments. To develop accurate and realistic assessments that are relevant to the target end-user community, these activities will be performed off-site at law enforcement operation and training facilities in coordination with law enforcement professionals. Operation of the TWS will always be conducted with a CoE engineer or scientist present. Supporting locations include:

Name	Address	Coordinates	Radius (km)
San Bernardino County Sheriff's Training Center	18000 Institution Road, Devore, California 92407	34° 10' 41", 117° 23' 6"	1
Fairfax County Fire and Rescue Academy	4600 West Ox Road Fairfax, VA 22030	38° 51' 16", 77° 22' 28"	1
West Virginia State Police Academy	135 Academy Drive, Dunbar, WV 25064	38° 22' 52", 81° 45' 29"	1
CNR Tunnel	County Route 83/16, Eskdale, WV 25075	38° 8' 6", 81° 24' 33"	1
Oklahoma County Sheriff's Office and Detention Center	201 North Shartel, Oklahoma City, OK 73102	35° 28' 11", 97° 31' 37"	0.5

The third type of operation will involve demonstration of TWS in public or private venues. These demonstrations will be important to gather a wide range of feedback and insight on the operation, usability, and functionality of the devices. Demonstration locations include criminal justice facilities, public conferences, and user events. Operation of TWS will always be conducted with a CoE engineer or scientist present. Supporting locations include:

Name	Address	Coordinates	Radius (km)
Baybridge Airport	Stevensville, MD 21666	38° 58' 31", 76° 19' 44"	1
Tampa Convention Center	333 South Franklin Street, Tampa, FL	27° 56' 33", 82° 27' 22"	0.25
San Bernardino County Sheriff Headquarters	655 East Third Street, San Bernardino, CA. 92415	34° 6' 15", 117° 16' 23"	0.25
Pinellas County Sheriff's Office	10750 Ulmerton Road Largo, FL 33778	27° 53' 40", 82° 47' 23"	0.75
National Institute of Justice	810 7th Street, NW, Washington, DC 20531	38° 54' 2", 77° 1' 20"	0.2
Pennsylvania Convention Center	1101 Arch St, Philadelphia, PA 19107	39° 57' 17", 75° 9' 33"	0.2
West Virginia Penitentiary	818 Jefferson Ave, Moundsville, WV 26041	39° 54' 57", 80° 44' 32"	0.3