2013 Aerial Surveillance Project

Persistent Surveillance Systems
Dayton Innovation & Development

• Tech Town is designed to support the application, commercialization, and convergence of cutting-edge technologies

• Creating a national sensor test bed for surveillance: **Trusted Situational Awareness**
Why is it important?

- Top 7 DOD Priority
- Can be utilized to prevent and minimize acts of terrorism, crime and murder
- Improve operational effectiveness
- Global Demand

Opportunity & Demand

- Industry is expected to grow by 8% annually to $91.5B by 2016
- Global expenditures on Cyber Security estimated to reach $86B by 2016
- Dayton would be the first test bed

Why Dayton?

- Home of Air Force Research Laboratories investing well over $1B annually on situational awareness/sensor technology
- Strong regional IT and human factors capabilities
- Home of very strong industry presence working in sensors and situational awareness integrators

2/4/2013
Supporting Law Enforcement

- Technological advancements help police departments maintain its public safety mission with reduced resources.

Real-time data and imagery technology allows Law Enforcement to

**Identify and interrupt illegal activity while providing valuable forensic intelligence**
PILOT FLIGHT DURING SUMMER 2012
Pilot operation was conducted from Jun. 21 – Jun. 29

PSS flights occurred during daylight hours and were centered over Sinclair Community College
  • Imagery transmitted to a fixed location at Sinclair

DPD selected 18 incidents for aerial surveillance
  • A detailed report of two incidents was completed during post-operational analysis
  • Burglary In-Progress at 530 Leo St.
  • Robbery Spree involving multiple commercial locations
• Report of Burglary In-Progress at 530 Leo St.
  • Suspect tracked from the burglary location to another location a few miles away. Officers were directed to that location and confirmed the vehicle and the suspect.

• This event was solved in real-time

• The following is actual imagery from the event
Activity is observed that looks like goods being loaded in back of truck at 11:43:07
Officer returns to scene, retrieves witness, goes to suspect’s location where witness positively IDs vehicle & suspect

Location of Burglary

Location where moving truck brought stolen items
Robbery Spree involving three commercial locations on the same day (Book Store, Subway, and Family Dollar)

Analysts were able to track the primary suspect to all of these locations as well as to a Clark gas station prior to the robberies.

The following is actual imagery from the event
Suspect observed running from Subway after attempted robbery
Suspect tracked to all robbery locations and possible area of residence.
DPD Pilot Project: Summer 2012

• Lessons learned during test operation:
  • Joint processes and operational priorities must be decided in advance
  • Imagery analysts will require some training by DPD officers
  • Flight times should correspond with identified crime patterns

• Opportunities for crime reduction / public safety:
  • System is ideal for obtaining investigative information on crime sprees
  • Increase solvability of crimes if occur during operational flight hours
  • Excellent support of live operations involving large disturbances, SWAT operations, or warrant service
Dayton Police Department

PLANNING FOR 2013
Highly mobile system allows deployment across the City of Dayton
  - North, South, East or West

Integration with DPD’s:
  - Dispatch records (RDC)
  - Records Management System (MIS)
  - Crime mapping & analysis tools (EIS)

Enables surveillance to follow crime patterns as they emerge
DPD Operation and Integration

• DPD providing four officers for training and analysis during operations

• Developing plans for 120 hours of flight over Dayton during summer months

• Surveillance is of public rights-of-way and not private space
Dayton International Airport

WIDE AREA SURVEILLANCE
Aviation Operation and Integration

- PSS will provide wide area surveillance systems and services to monitor Dayton International Airport (DIA) for a period of six (6) months.

- Services include installation, data capture, analysis, and system training for up to four (4) DIA employees.
Aviation Operation and Integration

- One (1) analyst workstation will be installed at DIA and up to three (3) will be installed at Tech Town to receive imagery for analysis.

- If the Aviation Department deems PSS’s work at DIA successful, $20,000 will be credited toward the purchase price of the equipment installed at DIA.
Economic Development Strategy Objectives

• Support commercialization and job creation efforts in the following targeted industries:
  • Aerospace Systems
  • Advanced Materials & Manufacturing
  • Information Technology & Advanced Data Management
  • Human Sciences and Healthcare

• Support the development of new markets, customers, technology and labor skills
Advancing Dayton’s Goals

• Positions the City to gain a piece of the $90 Billion global sensor market

• Aligns with AFRL sensor investments: $1 Billion

• A national test bed for integrated sensing technologies generates activity/investment at Tech Town

• Supports entrepreneurial development by enabling the police and airport to be a beta customer for local entrepreneurs
Questions?