

# Innovation

**SBIR Topic Number:**  
AF06-223

**SBIR Title:**  
Volumetric Sensing for Automatic Target Recognition (ATR) and Tracking of Dismounts

**Contract Number:**  
FA8650-07-C-1203

**SBIR Company Name:**  
Photon-X, Inc.,  
Huntsville, AL

**Technical Project Office:**  
AFRL Sensors Directorate,  
Wright-Patterson AFB, OH

This Air Force SBIR/STTR Innovation Story is an example of Air Force supported SBIR/STTR technology that met topic requirements and has outstanding potential for Air Force and DoD.



Standoff multi-modal three-dimensional (3D) biometrics

## Novel Layered-Sensing Biometric System

- Layered sensing involves detecting, identifying, and tracking people and objects over large geographical areas in difficult imaging conditions
- Photon-X uses its spatial phase imaging (SPI) technology which acquires high-resolution 3D video imagery in real time to image human activities; the SPI sensor captures high-resolution, three-dimensional (3D) videos of activities, facial expressions, and behavioral cues
- This capability provides powerful information that can be applied for the detection, identification, and tracking of dismounts, or analyzed for behavioral intent
- Photon-X has the technology to capture 3D information, even when both the sensor and the target are in motion, and even when the target exhibits non-rigid deformation

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