# Soldier Protection System (SPS)

**Executive Summary**

- The Soldier Protection System (SPS) consists of four subsystems: Vital Torso Protection (VTP); Torso and Extremity Protection (TEP); Integrated Head Protection System (IHPS); and Military Combat Eye Protection (MCEP). Each subsystem has its own acquisition strategy.
- The SPS TEP, Generation II VTP, IHPS, and MCEP met ballistic requirements.
- In 4QFY20, the Army completed First Article Testing of eight new, lighter-weight Generation III VTP designs (four torso plate and four side plates). The Army plans to further test the revised designs of the two lighter-weight VTP designs that did not meet ballistic requirements.

**System**

- The SPS is a suite of personal protection subsystems intended to, at a reduced weight, provide equal or increased levels of protection against small-arms and fragmenting threats compared to existing personal protection equipment. The SPS subsystems are designed to protect a soldier's head, eyes, and neck region; the vital torso and upper torso areas, as well as the extremities; and the pelvic region. The SPS is a modular system and provides soldiers the capability to configure the various components into different tiers of protection depending on the threat and the mission.
- The SPS consists of four subsystems:
  - TEP consists of the soft armor Modular Scalable Vest (MSV) with provision for adding the Ballistic Combat Shirt (BCS) for deltoid and extremity protection and the Blast Pelvic Protector (BPP) for pelvic and femoral artery protection.
  - VTP consists of front and rear hard armor torso plates (either the Enhanced Small Arms Protective Insert (ESAPI) or the X Threat Small Arms Protective Insert (XSAPI)) and the corresponding hard armor side plates (either Enhanced Side Ballistic Insert (ESBI) or the X Threat Side Ballistic Insert (XSBI)).
  - IHPS consists of a helmet, with provision for adding a mandible and/or visor for mounted use.
  - MCEP is a selection of protective eyewear validated for use by Army personnel. The Army's Authorized Protective Eyewear List includes all authorized protective eyewear.
- Soldiers currently receive SPS components through the Army Rapid Fielding Initiative. The Army plans to field the complete SPS to the Close Combat Force, which includes Infantry, Engineers, and Scouts with habitual attachments (i.e., combat medics, forward observers). The Army plans to subsequently field SPS to the broader Army as quantities are available.

**Mission**

Units will accomplish assigned missions with soldiers wearing the SPS that provides protection against injury from a variety of ballistic (small-arms and fragmenting) threats.

**Major Contractors**

- TEP Full-Rate Production Vendors/Designs (Multiple vendors to stimulate competition and achieve best price through Fair Opportunity awards):
  - Armor Express – Eden, North Carolina (MSV, BPP)
  - Bethel Industries Inc. – Jersey City, New Jersey (MSV, BPP)
  - Point Blank Enterprises, Inc. (Protective Apparel & Uniform) – Pompano Beach, Florida (BCS)
  - Carter Enterprises Industries Inc. – Brooklyn, New York (BCS)
  - Eagle Industries Unlimited – Virginia Beach, Virginia (BCS)
- VTP Low-Rate Initial Production Vendors:
  - Engense Armor Systems – Camarillo, California (ESBI)
  - Florida Armor Group – Miami Lakes, Florida (ESBI)
  - Leading Technology Composites – Wichita, Kansas (ESAPI, ESBI)
  - TenCate Armor – Hebron, Ohio (ESAPI, XSBI)
  - Avon/Ceradyne – Irvine, California (ESAPI, XSAPI, XSBI)
- IHPS Vendor:
  - Avon/Ceradyne – Irvine, California

**Activity**

- The development, testing, and production/fielding of the four SPS subsystems (TEP, VTP, IHPS, and MCEP) have been on different timelines. The Army made a Full-Rate Production decision for the TEP in September 2016 and the IHPS in October 2018. The Army completed Generation II VTP testing in February 2018. Each SPS subsystem is compatible with existing (legacy) personal protective equipment (for example, soldiers can use existing hard armor plates in the new MSV). DOT&E had no MCEP-related activity in FY20.
- The Army completed First Article Testing of three lighter-weight ESAPI and one lighter-weight XSAPI Generation III torso plate designs and three lighter-weight ESBI and one lighter-weight XSBI Generation III side plate design in 4QFY20. Upon completion of testing against additional ballistic threats in 2QFY21, the Army intends to make a subsequent Full-Rate Production decision on these lighter-weight VTP designs.
- The Army plans to complete additional full-up system-level testing of the SPS (with all subsystems combined) against additional threats in 2QFY21.
- The Army is testing VTP ballistic performance in accordance with DOT&E-approved test plans.
- The Aberdeen Test Center, Maryland, implementation of coronavirus (COVID-19) pandemic safety protocols and procedures resulted in approximately a 2-week delay in VTP testing.

**Assessment**

- After the first two lighter-weight ESBI designs failed to meet ballistic First Article Testing requirements, the Army revised two criteria for the lighter-weight ESBI. All three submitted designs met the Army's revised ballistic criteria.
- None of the three lighter-weight ESAPI designs initially met ballistic First Article Testing requirements. The Army revised a criterion and two of the three designs (one of which was modified from its original) subsequently met ESAPI ballistic requirements. The Army anticipates testing a revised third design in 1QFY21.
- The lighter-weight XSAPI design submitted for First Article Testing did not meet ballistic requirements. The Army anticipates testing a revised lighter-weight XSAPI design in 1QFY21.
- The lighter-weight XSBI design submitted for First Article Testing met ballistic First Article Testing requirements.
- DOT&E will report on VTP and SPS ballistic performance upon the completion of testing in 2QFY21.

**Recommendation**

1. The Army should continue the testing of the lighter-weight Generation III VTP designs.