Synthetic Training Environment - Information System (STE-IS)
Platform Development Kit (PDK)
The STE Ecosystem

STE-IS PDK Enables the Foundational, Cross-Cutting Architecture Across the Ecosystem

Squad Immersive Virtual Trainer (SiVT-IVAS)  
(Squad Immersive Interface)

Soldier Virtual Trainer (SVT)  
(Soldier Immersive Interface)

Reconfigurable Virtual Collective Trainer Air and Ground  
(RVCT-G /RVCT-A)  
(Air and Ground Vehicle Interfaces)

Growing multi-dimensional industry opportunities leveraging PDK to instantiate & evolve the STE Ecosystem
Released in FY22, the STE-IS PDK was made available in initial, layered technical data package to Tiers of industry, government, and academia partners to convey:

- Architecture
- Software Technology Stack
- Integration Patterns
- Agile DevOps Processes

With goal of fostering extensibility, integration & re-use across STE Family of Programs procurement activities.

**GUIDING PRINCIPLES**

- Align to MOSA & Digital Engineering
- Establish transparency on emergent technical architecture & capabilities
- Provide a evolving Technical Data Package (TDP) to steer industry investments for future opportunities
- Enable common STE fabric across various training modalities from squad to echelons above corps

**ACTIONS TO DATE**

- **Nov 2021**: Released “alpha” PDK” as part of SVT Industry Day & RFS (after 4 sprints)
- **Apr 2022**: PEO STRI Press Release on PDK availability industry partners
- **May 2022**: Initial prototype release of STE fabric software to STE-LTS (gov’t-to-gov’t exchange) & STTC
  
  Released to 25+ vendors to date

**OUTCOMES**

- Enabled informed industry-gov’t discussion on tech insertion into STE
- Greater innovation & competition evolving STE at tiered access
- Drive industry investments to advance state-of-the-STE
- Codify initial PDK state and evolve to remain at speed of technology with industry and operational feedback
STE-IS PDK and Its Application

1. Who the PDK is for?
   - Technical Leadership
   - Systems Engineers/Architects
   - Any vendor interested in technically contributing to STE ecosystem

2. What is the Level of Access?

<table>
<thead>
<tr>
<th>Tier</th>
<th>Purpose</th>
<th>Example</th>
<th>Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>General Stakeholder* (no contract)</td>
<td>Facebook, Google, etc</td>
<td>Technical SE artifacts + open standards</td>
</tr>
<tr>
<td>1</td>
<td>Working STE Feeder Contract</td>
<td>S&amp;T, SBIRs, IRAD</td>
<td>Tier 0 + limited SW infrastructure</td>
</tr>
<tr>
<td>2</td>
<td>Working core STE FoP contract</td>
<td>LTS, NGC, SVT, etc</td>
<td>Tier 1 + Full SW stack</td>
</tr>
</tbody>
</table>

- Government is prioritizing release @ Tier 0 while establishing future Tier 1-2 access
- All vendors sign DAs (OPSEC) PDK is at CUI level

3. What the PDK includes?

- STE-IS Reference Arch & Agile Integration Processes
  - Layered blueprint view of STE-IS software stack across TSS, TMT, OWT
  - Common components (data fabric, IG, CGF, TMT services, core infr)  
  - Agile Scrum-of-Scrum Processes

- Standards, Interfaces, APIs
  - Well Formed Format, OWT API, gitf, 3D Model Spec
  - Simulation data fabric clients/APIs
  - CGF and Game Engine APIs
  - TMT UI frameworks

4. What the PDK Enables?

- **Black-box to white box transparency**
- Knowledge to **formulate strategies/approaches compete in STE procurements** that will all leverage STE-IS as screening criteria
- **Evaluate** your products, technologies, innovations to **adopt or strangle** within STE-IS modular framework
- Understand/acknowledge Gov’t investments & gaps in **evolving** this product
- **Engage PM** on 1-on-1s, industry days, demos to evaluate PEO technology gaps

5. What the PDK is NOT

- Full open source access to all STE SW & source code
- Limited to technical data package artifact to support understanding of STE architecture, tools, interfaces
- Piloting & maturing underlying software for Tier 1-2 distribution with STE-LTS, SVT, and STTC
- Seeking opportunities to **graduate select STE components** to Tier 0 (e.g. data fabric, OWT stds, etc)
- I will be able to immediately build STE compliant capabilities.
- Initial Tier 0 emphasis to explain the STE-IS technical architecture & approach
- Future Roadmap across FY22-24 to mature software stack, extensibility for broader distribution (test utilities, sample clients, automated deployment, style guides, etc)
- Obtain industry feedback & STE use to evolve
STE-IS PDK Access & Feedback

**PDK Release Process**

**STAGE 1: Request Access**
- Identify purpose & need
- Intended audience is Technical
- Expectation Mgmt – initial "alpha release" as a TDP
- Not an freely, open stack software development platform for public

**STAGE 2: Sign Distro Agreement**
- Gov’t receives request, supplies STE-IS Distribution Agreement for Vendor submission

**STAGE 3: Vet & Release PDK**
- Gov’t conducts vendor vetting/OPSEC review and release PDK package to vendor

**Informed Industry – Gov’t Collaboration & Transparency**

**PM SE Expectations of Industry**
- Use PDK to enable STE-IS integration across future STE procurements
- Present relevant technical exchange for Gov’t engagements
- Drive innovation & competition to insert modern capabilities & technologies
- Acknowledge PDK capabilities & limitations to achieve the STE ecosystem

**Industry Feedback to PM SE**
- Apply PDK to evolve & drive future investments
- Ensure means by which to address future STE Increment 2/3 (LTS, NGC)
- Present more meaningful approaches to PM SE to adapt COTS/proprietary capabilities
- Nominate or provide feedback on relevant standards, interfaces for future STE needs (AI/ML, AR, embedded training)

**Expectations & Feedback**

**AFTER REQUEST**
- Use insights into PDK standards, APIs, interfaces IOT approach Gov’t
- Assess ability to adapt your COTS/proprietary products into PDK framework
- Provide informed feedback to evolve PDK & future releases (MVP based)

**Prior to Request**
- Intended audience is Technical
- Expectation Mgmt – initial "alpha release" as a TDP
- Not an freely, open stack software development platform for public

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Distribution A: Approved for public release
Next Steps & Future Plans

• STE-IS PDK is a continuously evolving product that will capture agile development progress, artifacts and interfaces as it gets tailored integration across the STE Ecosystem
  – Future plans include augmenting with including test clients, harnesses, sample interfaces, and updated standards/APIs
  – Graduating certain capabilities to a more openly deliverable model to Tier 0 vendors
  – Continuing lessons learned and feedback from STE-LTS and SVT to then scale-up for Next Generation Constructive (NGC)

• Future Plans/Opportunities:
  – FY23 STE-LTS OTA solicitation opportunities for Direct Fire Vehicles and AR for Forward Observer/Grenadier
  – FY23 STTC BAA topics areas leveraged for STE S&T investments
  – Early formulation of plans, strategies, approaches for NGC and use of STE-IS to scale up to support BDE to ASCC
  – Dec 2022 @ I/ITSEC: Conducting a STRI-Industry Technical Panel providing insights into overall STE progress and PDK usage to date
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IT'S THE BEST JOB WE'VE EVER HAD!