Air Force Simulators Innovation
The Innovation Match Game
TSIS, Orlando FL
16 June 2021
The Goal: Improving Aircrew Production

Goal State – cut time, the same levels of proficiency

Opportunity Zone

Traditional Pilot Training - many years to full proficiency
LEGACY SPECTRUM OF DEVICES

CBT = Computer Based Training
CSS = Cockpit Systems Simulator
WST = Weapons Systems Trainer

<table>
<thead>
<tr>
<th>Category</th>
<th>Fidelity</th>
<th>Cost</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBT</td>
<td>Passive</td>
<td>$1-2K/hr</td>
<td>30-40 hrs</td>
</tr>
<tr>
<td>CSS</td>
<td>Active</td>
<td>$1-2K/hr</td>
<td>30-40 hrs</td>
</tr>
<tr>
<td>WST</td>
<td>Motion</td>
<td>$1-3K/hr</td>
<td>50-80 hrs</td>
</tr>
<tr>
<td>Aircraft</td>
<td>Fluid</td>
<td>$~25K/hr</td>
<td>20+ hrs</td>
</tr>
</tbody>
</table>

Dead Zone Of Inadequacy

$ : existing
◇ : 50-80 hrs

Dead Zone

Fidelity
NEW SPECTRUM OF DEVICES

Data-Driven Learning Management System

CSS

ITD

PID

WST

Aircraft

DBT

Opportunity Zones

Visualization

Application

Motion

Fluid

Concept adapted from 97th OG

DBT = Device Based Training
CSS = Cockpit Systems Simulator
ITD = Immersive Training Device
PID = Personal Immersive Device
WST = Weapons Systems Trainer
VR = Virtual Reality
MR = Mixed Reality
Typical Training Instructor/Student Interaction

- Information flows to student through tools, with little to no feedback.
- Instructor works through each tool separately with student.
- Data collection on performance is mostly entered by the instructor.
- Feedback to student is largely through instructor.

This manually intensive for instructors to manage, & does not scale.
Future Vision of Training Systems

Future is Data Centric, with networked tools that assist Instructors, and provides students with self-executed training options.

Concept adapted from Maj Mark Budgeon, 11th BW
Sims Innovation Update

• Ten Pitch Day 2020 SBIR Phase II projects
• Six Pitch Day 2019 SBIR Phase II projects, at or near completion
• Two Successful transitions to Phase III contracts, more in progress
• Challenge projects
  • With AFWERX and ACC – Accelerating Pilots to Combat Ready Aviators
  • With AFWERX/STRIKEWERX & GSC - Mixed Reality Air Refueling Challenge
  • With RCO – B-21 Raider Training Systems Innovation Challenge

• So, what’s next?
I/ITSEC Special Event – Innovation Match Game

• Goal is to transition from ideas prototype to deployment
• Match Innovation technology to use cases in a game show format
  • Submissions from vendors and use cases will be gathered prior to event
  • Vendor technologies available to view on Expo Floor during I/ITSEC
• Benefits
  • Showcases training technologies ready for transition
  • Targets successful SBIR Phase II tech, but not limited to SBIRs
  • Match vendors with end users ready to deploy ideas
  • Provides expertise from Sims Innovation toward getting on contract
Playing Innovation Match Game

1. Aircrew Training personnel describe the challenge
2. Present three different prototypes
3. Audience Votes!
4. Reveal the choice for transition project
Innovation Match Game – How To Participate

• Requirements for Training Unit submissions
  • Identified training need/gap
  • Willingness to participate in prototype transition
  • Advocate for sponsorship/funding within their organization
  • Unit submissions will open in July https://www.aflcmc.af.mil/simulators/

• Requirements for vendor submissions
  • Successful previous DoD prototype implementation (SBIR or otherwise)
  • Willingness to pitch at I/ITSEC Event
  • Vendor submissions will open in August https://www.aflcmc.af.mil/simulators/

• Note! No contracts will be awarded at I/ITSEC as part of this event
  • Timeline for each project is dependent on budgets and organizational need
I/ITSEC 2021
Innovation Match Game