SPECIAL OPERATIONS FORCES ACQUISITION, TECHNOLOGY, & LOGISTICS

Campaigning with Partners for Integrated Deterrence

Ms. Lisa Sanders, Director, Science & Technology

SCIENCE & TECHNOLOGY FUTURES METHODOLOGY

SOF AT&L

SOF AT&L-ST VISION

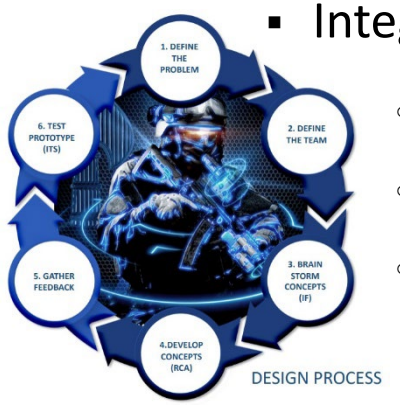
Innovate for Future Threats

Relentlessly Discover, Develop, Adapt and Employ Next Generation Technologies that Provide SOF an Overwhelming Competitive Advantage

Modernization of SOF – Prepare Today to Win Tomorrow

S&T FUTURES UPDATE

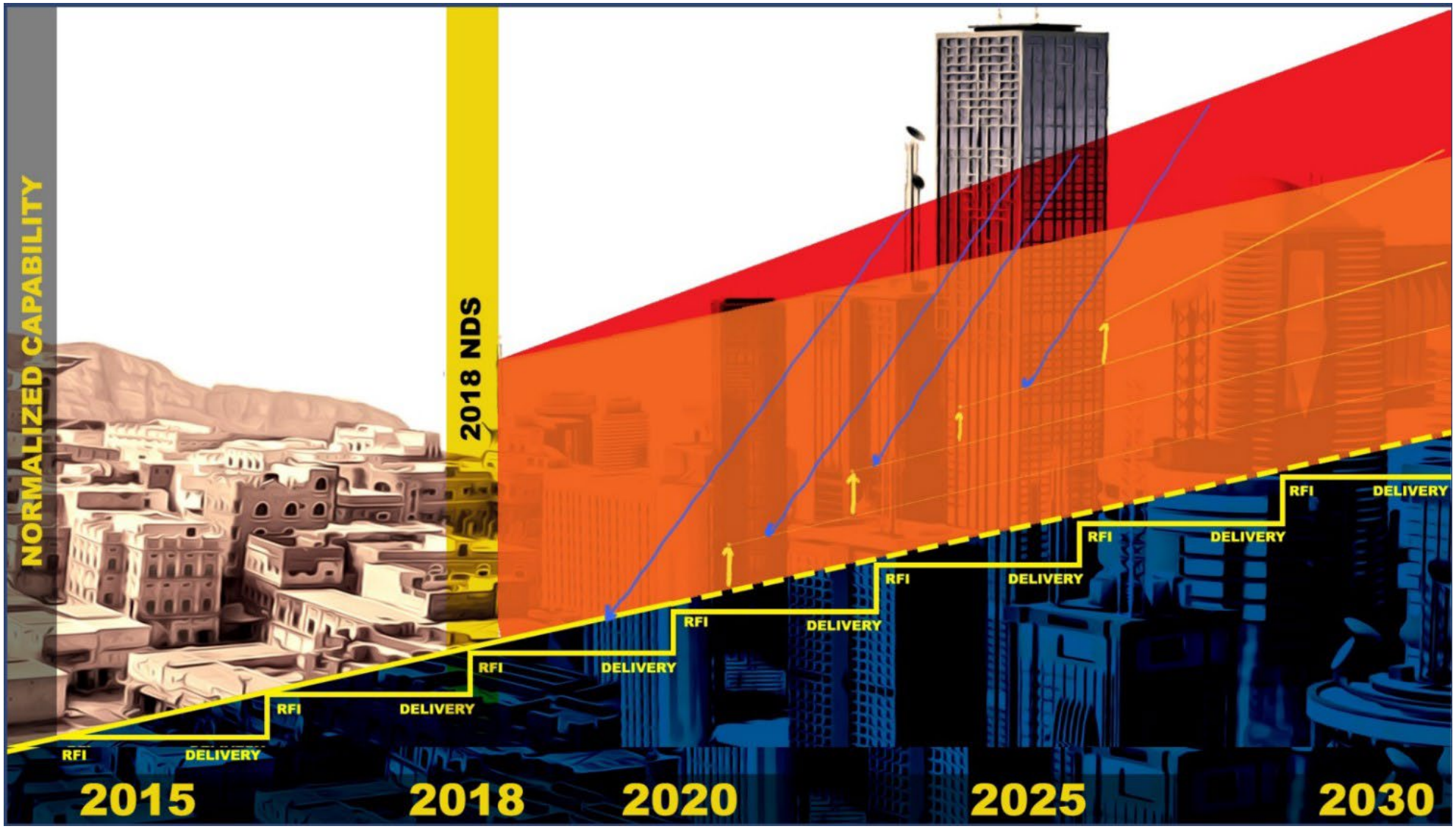
- **USSOCOM/SOF AT&L ST Futures Introduction**
  - SOF AT&L ST DIR established a Futures initiative in 2018, and Updated the Methodology in 2020
  - Key goals/focus:
    - Develop “Off-Axis” Perspective Regarding How Technology Can Enable (or Disrupt) Future SOF Operations
    - Explore Promising Concepts – Informs Strategic Command Decisions and Investments
  - Way Forward
    - Integrate S&T Futures Methodology into SOCOM Enterprise Processes
      - Foundry Topics
      - Targeted Experimentation
      - Modernization Roadmaps



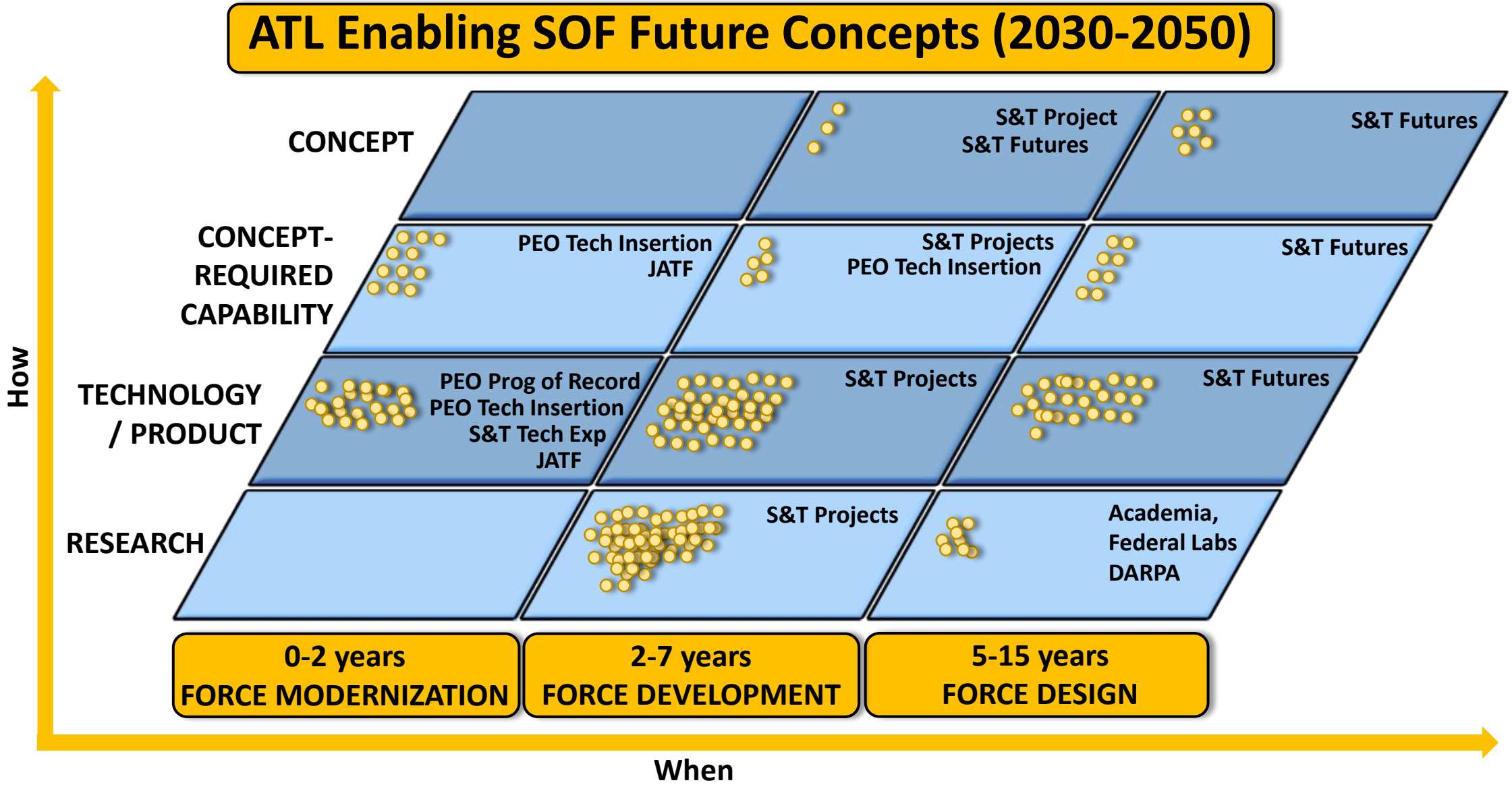
DESIGN PROCESS

OUTCOME: Enterprise-Level Strategic Decision Making

WHY DISRUPTIVE INNOVATION?



FUTURES METHODOLOGY LANDSCAPE



INTEGRATED S&T FUTURES METHODOLOGY

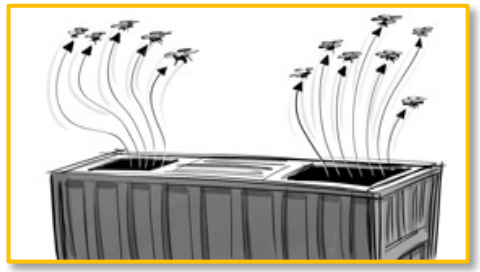
3-Phase Process With Two Supporting Tools

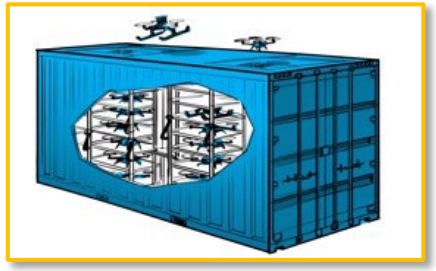
Innovation Foundry
- 60 days from idea to 3-day event
- 60 Subject Matter Experts and 20 SOF Operators
- 8-10 high potential concepts

Rapid Capability Assessment
- 90 days after foundry
- 5-day event
- 25 Subject Matter Experts
- 4 SOF Operators
- 5-8 “Concept Required Capabilities”

Technology Sprints
- 4-8 teams, $25K - $250K
- 10 weeks – 6 months development effort
- Prototype capability for field experimentation

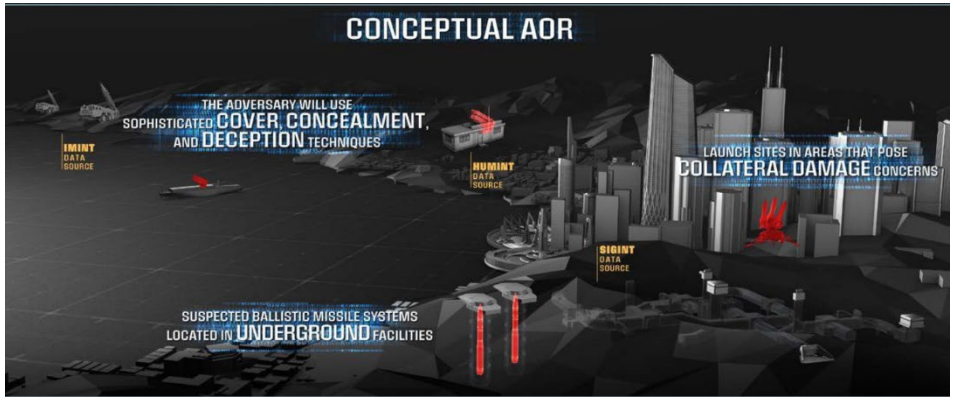
Concept Video
- Developed as Part of Process





Capability Demonstration
- Real World Interaction of Technology Sprints

FUTURES METHODOLOGY EXAMPLE



FIND | FIX | TRACK CONSTRAINTS

- The BMs and associated systems are located in underground facilities and the number and type of assets as well as the specific ongoing activities are not visible.
- The adversary will use sophisticated Cover, Concealment, and Deception (CCD) techniques.
- The UGFs have multiple protective layers/ systems to prevent direct access underground.
- There will be very limited Indications and Warnings (I&W) prior to deployment.
- Once deployed, the adversary uses large operating areas with a significant numbers of UGFs and/or other hide sites to disperse and hide their mobile BMs and forces.
- Concepts will be emplaced for a significant time without the ability to externally replenish batteries or other components.
- The BM and systems will be mobile and will limit time they are stationary/exposed between UGFs/ hide sites.
- The BM TELs have road restrictions.

INNOVATION FOUNDRY 7 — CONCEPTS FOR BALLISTIC MISSILE DEFEAT

TARGET CONSTRAINTS

- This will be a dynamic targeting process.
- These will be time sensitive targets.

Note: Given the high value of these targets, the concept should try to match the best "shooter" (highest Pk) available to engage the target. However, "lead down range" is preferred to "no shot" even if a low Pk.

ENGAGE CONSTRAINTS

- The BMs and associated systems are located in underground facilities and are protected from conventional air delivered munitions when inside.
- The targeting solutions will be time sensitive.
- Human in the Loop (HITL) control of kinetic effect munitions is required.

Note: Destruction of mobile launch systems after launch is still valuable since the can be reloaded.

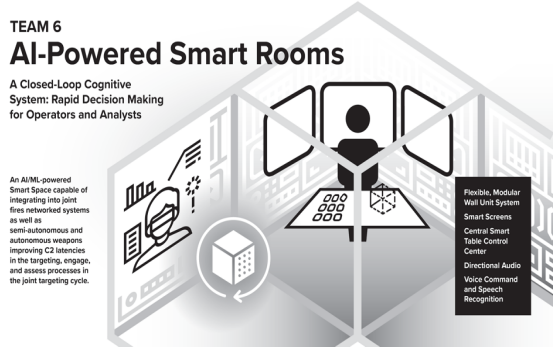
ASSESS CONSTRAINTS

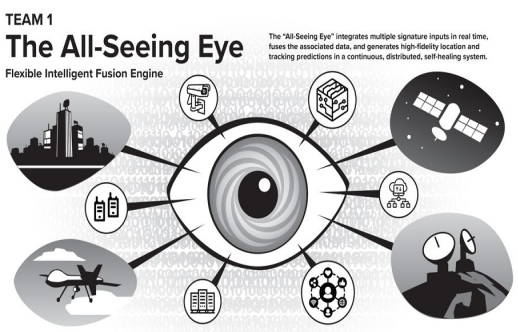
- External BDI capability may not be available

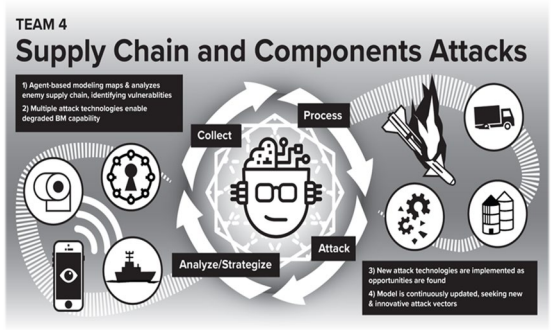
Note: For these high value assets, the kill assessment is time-critical. People are going to want to know!

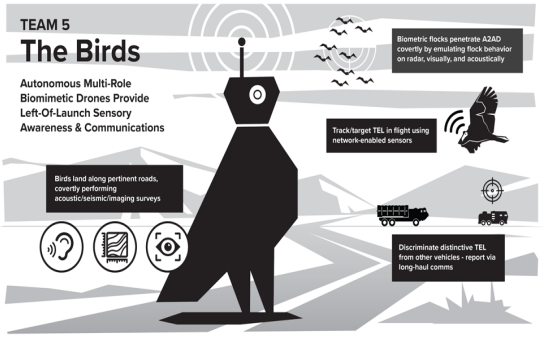
BALLISTIC MISSILE DEFENSE (BMD) 2030 RAPID CAPABILITY ASSESSMENT (RCA 7)

- **Four teams tasked to develop concept capability packages addressing the following topics:**
  - Team C2 (Two Teams)
  - Team Nano
  - Team Robotics
- **Non-Traditional Business to Business Contract approach supports Non-Traditional Vendors**







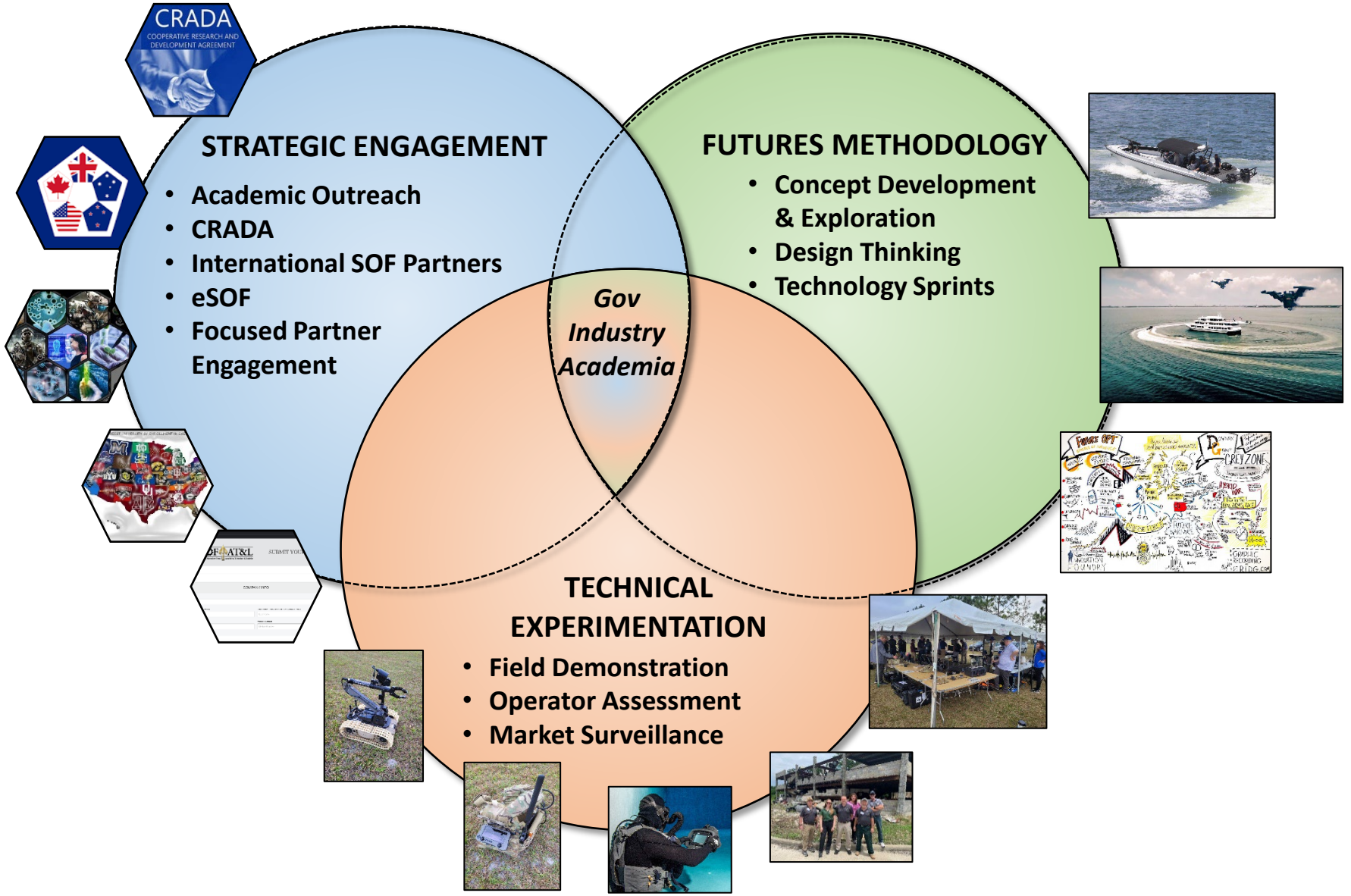


RECENT EVENTS

- **BMD 2030 Integrated Technology Demonstration**
  - April 7, 2022
  - Crestwood, KY

- **Innovation Foundry 10 (IF 10)**
  - May 3-5, 2022, SOFWERX Tampa, FL
  - *Diversity of SOF Skillsets and Traits, 2040*

ENGAGING & ENABLING THE ECOSYSTEM



EXPERIMENT WITH US!

*Upcoming Innovation Foundry (IF) Events (*Topics to Be Validated)*

Participant Nominations → ***SOF Operations in a World of Omnipresent Sensor Networks****

https://events.sofwerx.org/if11/

@ SWX, Tampa, FL

Participant Nominations → ***Joint/Partner Communications in a Contested/Austere Environment****

https://events.sofwerx.org/if12/

@ SWX, Tampa, FL

Participant Nominations → ***Understand & Exploit the Information Domain – 2040****

https://events.sofwerx.org/if13/

@ SWX, Tampa, FL

Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan '23	Feb	Mar	Apr

Soldier Systems/See Through Walls

Red Springs, NC

Upcoming Technical Experiment (TE) Events

Experiment White Papers

https://vulcan-SOF.com

→ ***Next Gen Effects/Contested Communications***

Avon Park, FL

Experiment White Papers

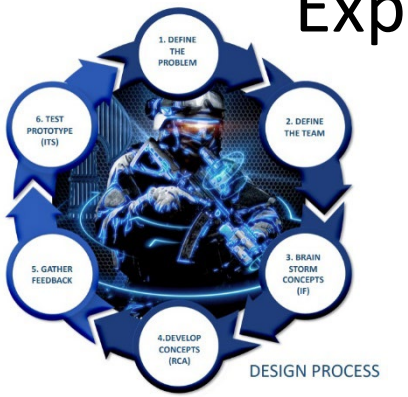
https://vulcan-SOF.com

→ ***Special Reconnaissance for Integrated Deterrence***

Avon Park, FL

SUMMARY

- **The Futures Methodology is an integrated approach that drives disruptive innovation**
- **Next Major Improvements:**
  - Leverage SOF Enterprise and existing tools to identify relevant Foundry Themes and Topics
  - Continue integrating spinoffs into capability development pathways
  - Iterate and interact with S&T Strategic Engagement, Technical Experimentation, and other SOCOM enabling processes



DESIGN PROCESS