U.S. AIR FORCE

USSF

Integrated Capabilities Directorate

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Dr. Reid Melville

Chief Innovation Officer, Integrated Capabilities Directorate (AFRL/RS)

Integrated Capabilities – Why Integrate?

Four Offices Unified Within One Directorate

INTEGRATED CAPABILITIES

Mission: To Accelerate the Department's Future Force through Cross-Discipline Collaboration

Vision: To be the DAF's Leading Source of Operationally Relevant Future Force Solutions

Common Values

Technologically Agnostic

Clear Demand Signals
No Hidden Agendas

Willingness to Pivot
Strive to Change Bureaucracy

Est. 2021

Architecture *(6.4)*

Design & integrate DAF frameworks we can connect to and use to drive Capability Development (CD)

Est. 2020

Transformational Capabilities Office (TCO) *(6.2 - 6.3)*

Develop technology for leap-ahead capabilities supporting CD needs ready for EMD in 4-5 years

Est. 2016

Strategic Development Planning & Experimentation (SDPE) *(6.4 & 6.6)*

Understand military utility & address CD needs in 3-4 years; enable concepts & transition with MS&A

Inc. 2022

Center for Rapid Innovation *(CRI) (FLEX 4)*

Rapidly develop & deliver solutions that address urgent warfighter needs in 24 months or less

AFRL's Transformational Component

- **An Integrated Science & Technology Component**
  - Originated from the 2019 Air Force Science & Technology Strategy
  - Represents ~20% of the annual DAF science & technology budget
  - Provides opportunity to accelerate strategy aligned S&T
  - Envision, mature and demonstrate S&T for new warfighting concepts & leap ahead solutions
- **Independently Managed by TCO**
  - Outside technical discipline-focused structure
  - Leverage capabilities & expertise from across the S&T enterprise
  - Separate & agile processes
- **Competitive and Cross-Disciplinary**
  - External validation and continuous stakeholder engagement
- **Wide Array of Analysis- Driven Approaches**
  - Build commitment, inform pivots, and serve as basis for new investments

**The SDCP is managed by the AFRL Research Advisory Council (RAC)*

Transformational capabilities are those that provide a significant advantage to us or a significant disadvantage to our adversary that cannot be easily or quickly mitigated by current or near-term technologies or tactics.

Integrated Capability Areas of Interest

- **Expeditionary Energy** – Light weight and efficient power-generation systems are needed for USAF Expeditionary Forces. Power generation systems should be in the 5 to 30KW size and conform to AMMPS (Advanced Medium Mobile Power Source) specifications: ie. Be skid mounted, ruggedized, weight optimized over legacy systems, and conform the AMMPS volume (packaging)requirements. These new class of power-generation systems must achieve their respective power ratings and reduce the noise, weight, and sustainment burdens with a smaller logistical footprint (size and weight). Specific Power of the base unit must be optimized and the specific fuel consumption must be competitive with fielded systems.
- **AI Planning** – A human and AI collaborative planning system that can build, assess, and adapt combat plans at the scale and speed of peer conflicts
- **Software Defined Network Enablers** – Integrating, assessing, and demonstrating advanced networking technology solutions to enable seamless movement of data to the right place at the right time to achieve mission effects on military relevant timescales
- **Synthetic Environment for Training & Operations** – Key technology maturation and demonstration to enable future force relevant test and training in a synthetic environment

Questions?

If you have additional questions or would like to connect with Dr. Reid Melville and AFRL's Integrated Capabilities Directorate, please email **AFExplore@us.af.mil**.

Integrated Capabilities website:
https://afresearchlab.com/technology/integrated-capabilities/