ARMY FUTURES COMMAND

Space and Missile Defense Symposium

10 August 2021

LTG Jim Richardson

ARMY FUTURES COMMAND

Who We Are

OUR COMMANDS

FUTURES & CONCEPTS CENTER
FCC PROVIDES THE INTELLECTUAL FOUNDATION AND DISCIPLINED APPROACH TO DESIGN, DEVELOP, AND FIELD THE FUTURE ARMY

CDEVCOM COMBAT CAPABILITIES DEVELOPMENT COMMAND
CCDC PROVIDES THE RESEARCH, ENGINEERING, AND ANALYTICAL EXPERTISE TO DELIVER CAPABILITIES THAT ENABLE THE ARMY

MEDICAL RESEARCH & DEVELOPMENT COMMAND
FROM ILLNESS TO INJURY, MRDC PROVIDES RESEARCH AND DEVELOPMENT TO ADDRESS ARMY MEDICAL REQUIREMENTS

THE RESEARCH & ANALYSIS CENTER
TRAC PRODUCES RELEVANT, OBJECTIVE, AND CREDIBLE OPERATIONS ANALYSIS TO INFORM KEY DECISIONS FOR AFC, ARMY, AND JOINT LEADERS

- 26,000 People
- 26 States
- 23 OCONUS Locations
- 11 Countries
- 5 Continents
- 16 Organizations
- 19 Standalone Facilities
- 2 Senior Commanders

OUR TEAMS

CROSS-FUNCTIONAL TEAMS
8 CFTs ALIGNED AGAINST THE 6 MODERNIZATION PRIORITIES - DELIVERING 31 SIGNATURE SYSTEMS

COMBAT SYSTEMS DIRECTORATE
CSD IS THE FOCAL POINT IN AFC FOR INTEGRATION AND SYNCHRONIZATION WITH ASA(ALT) AND THE 12 PROGRAM EXECUTIVE OFFICES

ARTIFICIAL INTELLIGENCE TASK FORCE
LEADS, INTEGRATES, & SYNCHRONIZES THE ARMY'S AI STRATEGY AND IMPLEMENTATION PLAN

ARMY APPLICATIONS LAB
ACCELERATES THE DISCOVERY, EVALUATION, & TRANSITION OF DUAL-USE TECHNOLOGY AND BUSINESS PRACTICES FOR AFC

SOFTWARE FACTORY
ARMY SOFTWARE FACTORY
INCREASES THE ARMY'S DIGITAL PROFICIENCIES WHILE LEVERAGING AGILE DEVSECOPS PRACTICES AND CLOUD TECHNOLOGIES TO BUILD ORGANIC SOFTWARE

OUR SUPPORT

75TH INNOVATION COMMAND
LEVERAGES THE UNIQUE SKILLS, OF AMERICA'S ARMY RESERVE TO DRIVE OPERATIONAL INNOVATION, CONCEPTS, AND CAPABILITIES

ARMY TEST & EVALUATION COMMAND
ENABLES MULTI-DOMAIN OPERATIONS THROUGH RIGOROUS DEVELOPMENTAL TESTING AND INDEPENDENT OPERATIONAL TESTS AND EVALUATIONS.

OUR PARTNERS

ASSISTANT SECRETARY OF THE ARMY (ACQUISITIONS, LOGISTICS, & TECHNOLOGY) - ASA(ALT)
&
ARMY STAFF
ARMY COMMANDS
SISTER SERVICES
TRADITIONAL INDUSTRY
SMALL BUSINESS
ACADEMIA
ALLIES & PARTNER NATIONS

What We Do

WHAT WE DO

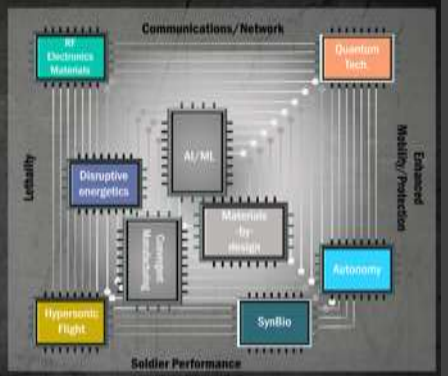
- DESCRIBE THE **FUTURE OPERATIONAL ENVIRONMENT**
- DEVELOP & DELIVER **CONCEPTS**
- DEVELOP & DELIVER **FUTURE FORCE DESIGNS**
- SUPPORT THE DELIVERY **MODERNIZATION SOLUTIONS**

CFT Signature Modernization Efforts

PRIORITY RESEARCH AREAS – BIG BETS

Highlights of Moonshot Objectives

- Drone-mounted manufacturing platforms and a micro-factory manufacturing platform in a backpack to support sustainment needs during individual Soldier missions
- C2 in a Box - an AI-based system serves as a fast, insightful advisor to the commander; it provides detailed analysis of the situation in all domains
- Eye Over the Battlespace – a self-organizing widely distributed "society" of all available sensors and information-fusion tools on the battlefield
- Viral network that can autonomously propagate and self-assemble through a multitude of communication-capable devices
- All-robotic unit that comprises of a dozen of autonomous ground robots carrying hundreds of small, intelligent collaborative flying-perching robots



Towards multidisciplinary models that incorporates AI/ML algorithms and microscale morphological designs

SPEED - RANGE - CONVERGENCE - DECISION DOMINANCE - OVERMATCH

Project Convergence: Campaign of Learning

Project Convergence ensures the Joint and multinational force can rapidly and continuously integrate or "converge" effects across all domains through **intelligence gathering, data sharing, interoperable systems** to decide and act more rapidly against adversaries in competition and conflict.

	Aug-Sep 2020 Enhancing the Close Fight		Oct-Nov 2021 Driving Joint Integration		Aug-Sep 2022 Leveraging Joint & Allied Partners
Operational Theme	• Multi-Domain Operations ○ Penetrate ○ Dis-Integrate ○ Exploit		• Joint Interoperability • Units vs Scientists / Engineers • Scalability, Optionality, Simultaneity, Complexity • JSIL & Data Collection fully integrated • JADC2		• Concept Driven (MDO & JWC) • Combined and Joint (AUS, GBR) • CJADC2
Exercise	**Defender Europe/JWA 20**	**Project Convergence 20**	**Pacific Sentry / JWA 21**	**Project Convergence / PNTAX 21**	**Defender 22 (Project Convergence + JWA)**

What questions are we trying to address:

1. What technologies enable the Joint Force to penetrate and exploit positions of advantage within enemy A2/AD at echelon?
2. What emerging technologies contribute to how the joint force fights in Joint All-Domain Operations?
3. How do we incorporate artificial intelligence, machine learning, autonomy, robotics, common data standards and architectures to enhance decision speed and multi-domain maneuver at the joint tactical edge?
4. How do we establish a joint network with required bandwidth that is sufficiently resilient and responsive in a Delayed / Disconnected, Intermittent, and Limited (D/DIL) environment?
5. How do our technologies perform in a D/DIL environment?

Project Convergence is the Joint Force experimenting with speed, range, and decision dominance to achieve overmatch and inform JADC2.

Project Convergence:
Joint Board of Directors

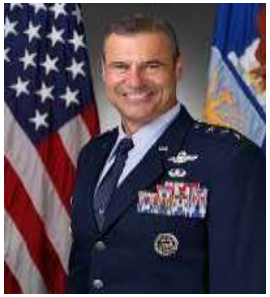

LTG Richardson
DCG, AFC


LTG Rainey
USA G3


LTG Morrison
USA G6


LTG Potter
USA G2


Lt Gen Hinote
USAF A5


Lt Gen Guastella
USAF A3

PROVIDES FORMAL GOVERNANCE FOCUSED ON EVENT OUTCOMES:

- EXPERIMENTATION OBJECTIVES
- USE CASE APPROVAL
- TECHNOLOGIES
- DATA COLLECTION PLAN
- COMMEX PARTICIPATION


LtGen Smith
USMC MCCDC


VADM Trussler
USN N2/6


VADM Kilby
USN N9


Lt Gen Saltzman
Space Force 3


LtGen Groen
JAIC


LtGen Crall
Joint Staff J6


VADM Munsch
Joint Staff J7

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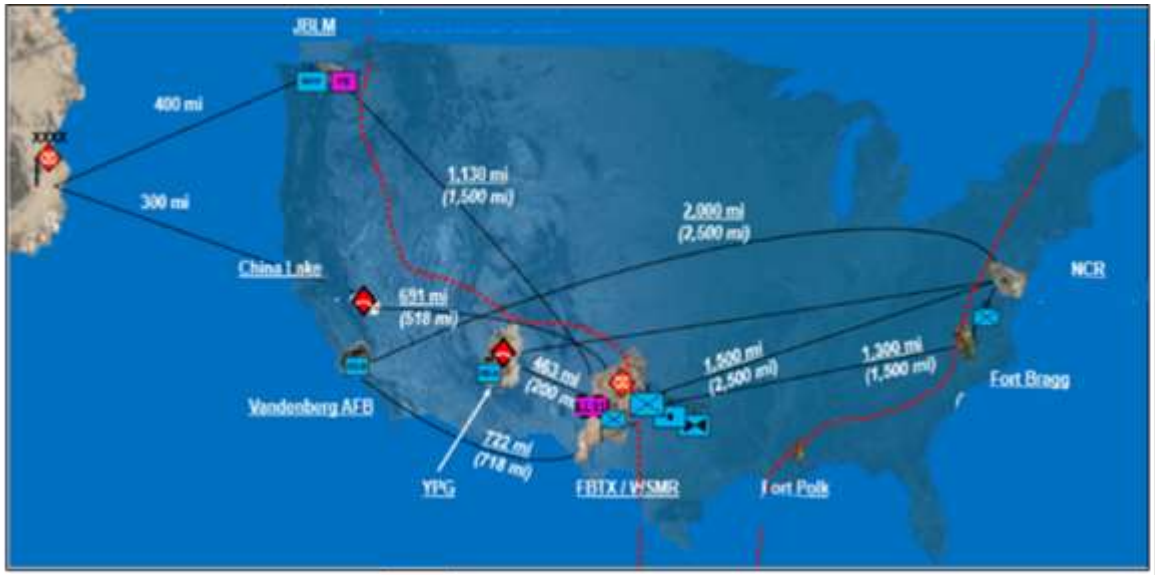
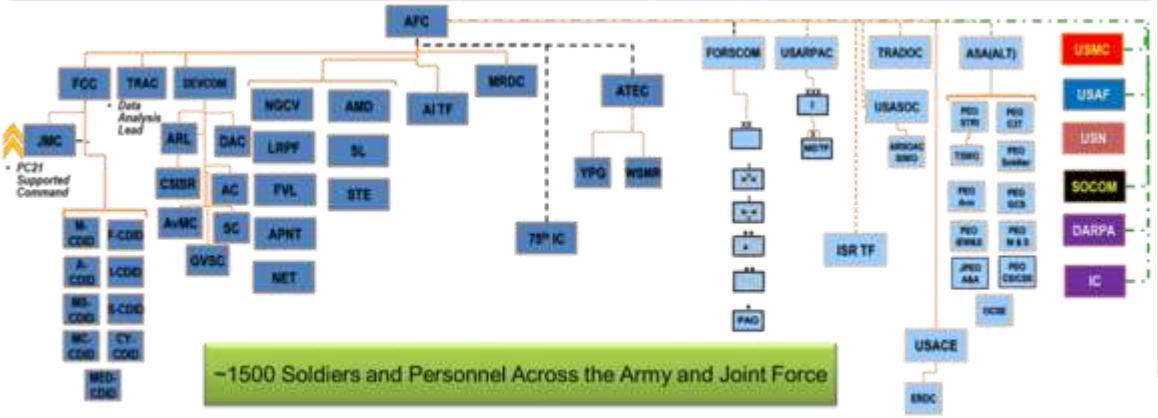
Project Convergence 21 Overview





PC21 builds off of lessons learned in PC20 with added focus on:

- Joint Interoperability
- Operations in a Delayed/Disconnected Intermittent Latent (DIL) environment
- Enabling decisive maneuver with all domain situational awareness
- Evolving the network to a resilient data ecosystems responsive to point of need
- Further integration of AI, autonomy and robotic systems into tactical formations

PC21 demonstrates our ability to solve Joint problems and inform Joint concepts

Project Convergence 21 Overview

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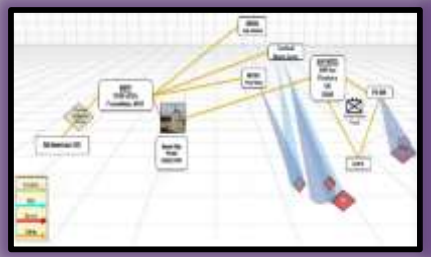
Evolution of Project Convergence

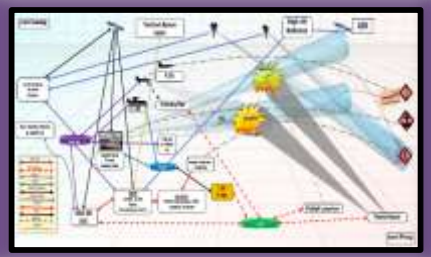
- Increased capacity and complexity
  - 7x Use Cases in PC 21 (incl. Joint Use Cases) vs. 3x Use Cases in PC 20
- Unit focused including 1st MDTF and 82d Airborne Division
  - Leader and Soldier Touchpoints
- Integrated Joint Data Collection and Assessment Plan
- Employs an integrated fully contested and degraded environment
- Utilize Joint lab-based and cost-effective risk reduction events

PC 21 Use Cases

UC 1-2: Maintain Joint Force JADSA

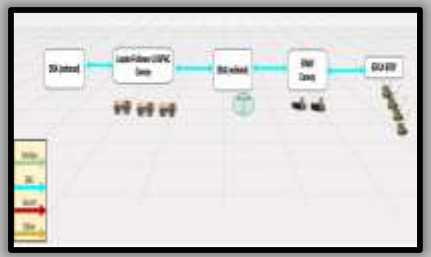


UC 2-1: Joint AMD Engagement

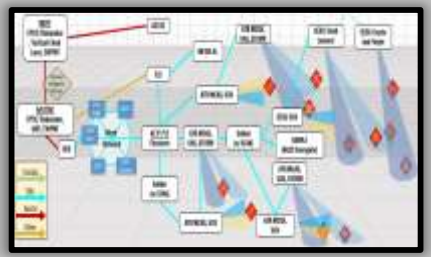


UC 2-2: Joint Fires

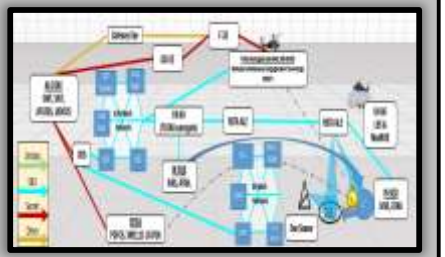
UC 3-1: Semi-Autonomous Resupply



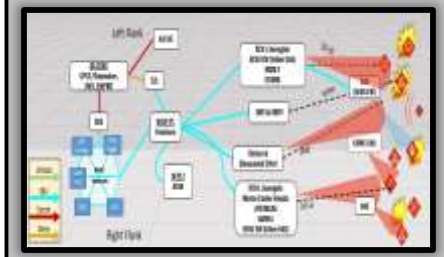
UC 4-1: AI / Autonomous Recon



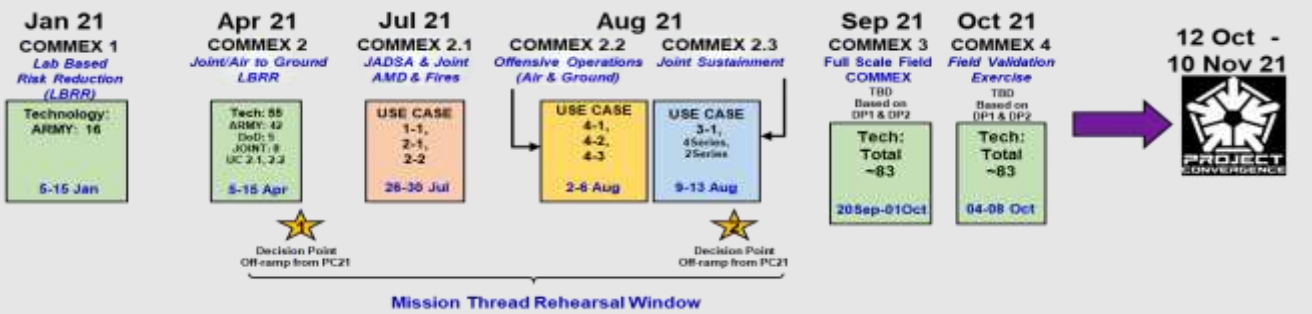
UC 4-2: IVAS-Enabled AASLT



UC 4-3: Mounted AI-Enabled Attack



PC 21 "Road To War"



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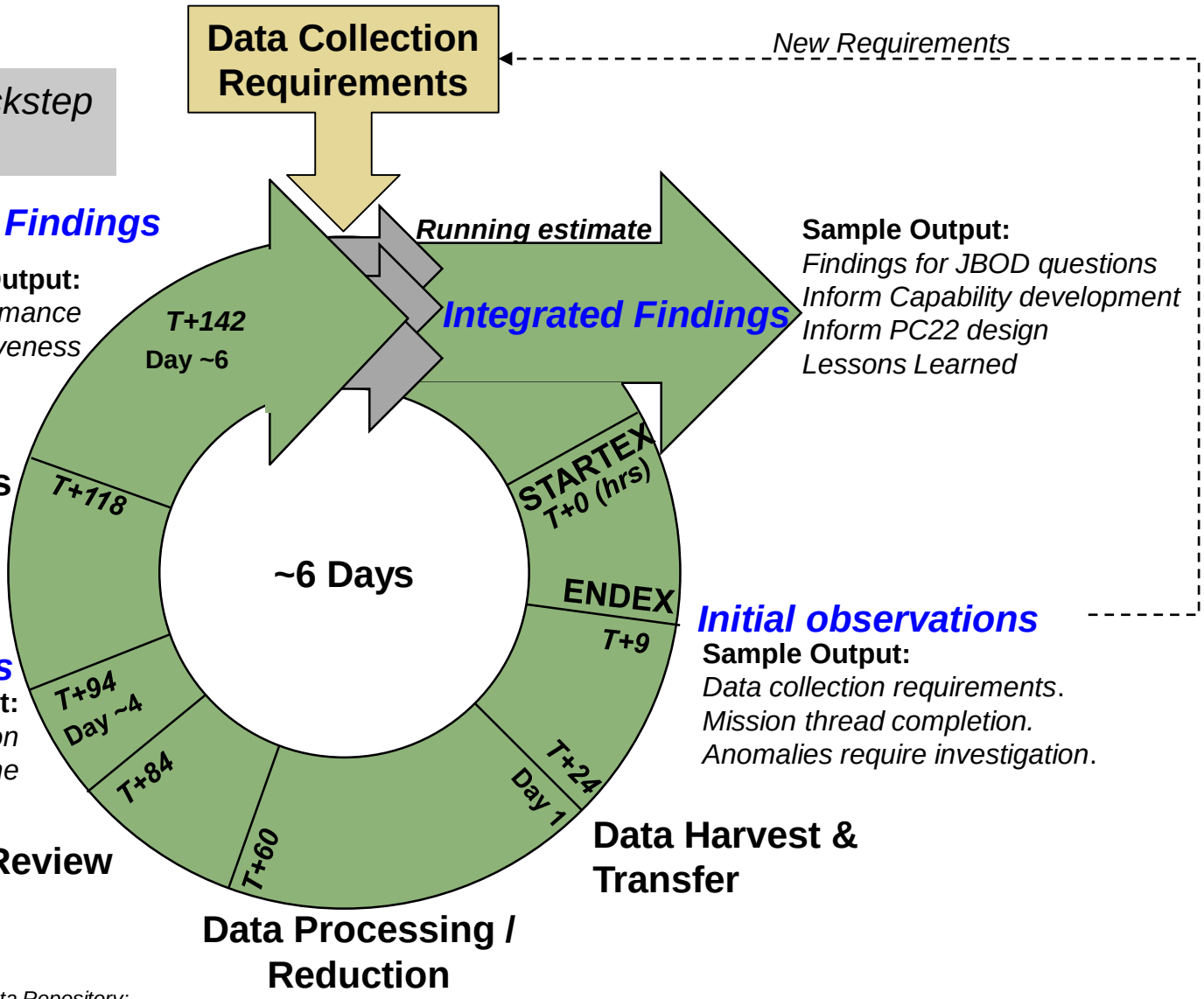
Project Convergence Data Collection

Conduct analysis in lockstep with event execution.



AERDR – Army Experimentation Results Data Repository;
DAG – Data authentication group: authenticate data generated during the event as suitable for analysis.

Project Convergence: Key Takeaways

In the dirt experimentation to inform the Joint Warfighting Concept and Joint All-Domain Command and Control; reinforced by formal data collection and analytical assessments.

Developing integrated solutions for the Joint Force and DoD critical missions; identifying key technologies for accelerated development.

Collaboration with partners is critical;
we must all modernize with the goal of a combined force operating at machine speed.

QUESTIONS?