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# State of APG Roundtable

April 20, 2021





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# C5ISR

## Center of Excellence

★★ **MG Mitchell L. Kilgo**

Commanding General, Communications-Electronics Command  
Senior Commander, APG





# APG C5ISR Center of Excellence

## Empowering Soldiers Across the C5ISR Technology Life Cycle



Army Futures Command



Assistant Secretary of the Army for Acquisition, Logistics and Technology



Army Materiel Command



Combat Capabilities Development Command



DEVCOM C5ISR Center



Conducts applied research and development across a wide variety of capability areas that touch all six of the Army's modernization priorities



Network Cross-Functional Team



Narrows capability gaps in the Army's Mission Command Network through user experimentation, assessments, and technical demonstrations



PEO C3T

PEO Command, Control, Communications-Tactical



Delivers the hardware and software required to provide Army formations with an expeditionary, mobile, simple-to-use, and hardened tactical network

PEO IEW&S

PEO Intelligence, Electronic Warfare, and Sensors



Develops and integrates sensors and sensor data across multiple technologies, ensuring warfighters have a complete understanding of the battlefield



Communications-Electronics Command



Sustains C5ISR hardware and software systems after fielding and ensures repair parts are available wherever and whenever needed





# Past-Year Accomplishments



- **Joint Systems Integration Lab**
  - Single, virtual realistic tactical network environment
- **Orion Forge**
  - DevSecOps environment
  - Partnership with Network Cross-Functional Team
  - RAINMAKER first effort to move into this environment
- **NetModX modernization environment**
  - Evaluate maturity of DoD and industry technologies early in the R&D cycle
- **C4ISR/Electronic Warfare Open Suite of Standards (CMOSS)**



- **Capability Set 21**
  - Fielding to four BCTs in FY21, five more in FY22
  - Fielding to Multi-Domain Task Force and Expeditionary Signal Battalion-Enhanced units
- **Command Post Computing Environment**
  - Fielding to more than 80 Army units by end of FY21
- **Sensor-to-shooter network design and procurements**
  - Combined Joint All-Domain Command & Control (CJADC2)
  - Integrated Visual Augmentation Systems (IVAS)
  - Project Convergence
- **S&T and Industry Development efforts**
  - Aligned to support Capability Set 23 preliminary design



- **Cyber Electromagnetic Activity Fieldings**
  - 3<sup>rd</sup> Armored Brigade Combat Team, 1st Armored Division
  - Tactical Electronic Warfare System (TEWS)
  - Electronic Warfare Planning and Management Tool (EWPMT)
  - VROD Modular Adaptive Transmit (VMAX)
- **Automated Installation Entry**
  - Secure and quicker installation access control
  - Facial recognition
- **PEO IEW&S/Army Contracting Command Acquisition Lead Time Forums**
- **Open Innovation Lab**
  - Enables Academia, Industry, Government and other organizations to collaborate on Army PNT future capabilities
- **C5 OTA Sponsorship**



- **Asset Management**
  - Depot Maintenance Forward
  - Repair Cycle Floats
- **Supply Availability (SA) and Backorders**
  - Finished FY20 with 95% SA and 44% decrease in backorder lines
  - Best finish in 6 years
- **Software Repository**
  - One-stop-shop for more than 70 C5ISR software updates
- **Shared Services Center**
  - Bringing new efficiency to Enterprise Resource Planning system sustainment



# Priority Focus Areas – 1-3 years



## ➤ Support for Combined Joint All-Domain Command and Control (CJADC2) and Multi Domain Operations:

- Mission Command/Intelligence Data Convergence
- Enhanced ISR capabilities shortening sensor to shooter time frame
- Advanced electronic warfare capabilities
- Assured Positioning, Navigation & Timing
- Mobile and survivable command posts
- Resilient and intelligent communications/networking & cyber
- Countermine technologies
- Power – sources, storage and distribution

## ➤ Capability Set 21

- Fielding
- Tech inserts
- Handheld, Manpack and Small Form Fit (HMS) radio operational test
- Command Post Computing Environment assessments/test

## ➤ Capability Set 23

- Prototyping, experimentation and informing Preliminary Design Review, aligned to execution reviews

## ➤ Capability Set 25

- Rapid Innovation Fund prototyping, POM planning

## ➤ Experimentation/Training

- Project Convergence
- NETMODX
- Cyber Blitz
- Cyber Quest
- Warfighter Exercise 21-4
- DEFENDER 21
- Training center rotations

## ➤ Multi-Domain Sensor System

- New airborne sensing capabilities to include manned and unmanned aircraft as well as other more non-traditional systems (i.e. High Altitude Balloons and Air Launched Effects)

## ➤ Terrestrial Layer System

- Next-generation ground based EW/Cyber/SIGINT capability to give ground commanders organic sensor collection capability

## ➤ TITAN

- Enables ability to collect, process, exploit and disseminate sensor data from multiple sources
- Backbone of the sensor-to-shooter needs of the future force

## ➤ Integrated Tactical Network sustainment planning

- Capability Sets 21, 23

## ➤ Build RCF Capability

- Stabilize organic industrial base
- Decrease unit downtime

## ➤ Software Readiness

- E-patching
- Unit Status Reports
- Automated tools
- Software Assurance

## ➤ Organic Industrial Base Modernization

- Sustain force, maintain pace with modernization, surge capacity for Large-Scale Combat Operations (LSCO)
- Demand Planning for LSCO



# Challenges/Opportunities



- **Finding New Efficiencies**
  - Requirements versus finite resources
- **Technology Protection**
  - Always a priority but now a renewed emphasis
  - New processes to communicate effectively with industry and academia
- **Cooperative Research and Development Agreements (CRADAs)**
  - 107 active CRADAs
- **Prognostic and Predictive Maintenance (PPMx)**
  - Identify maintenance trends



- **Defining the Future Network (2025 and beyond)**
  - Automated and protected
  - Expand high-capacity communications
  - Air-to-ground communications
  - Robust cloud capabilities
  - Automated network management and decision tools
- **MDO-Dominant Network by 2028**
  - Assured network transport
  - Distributed mission command
  - Rapid decision-making
  - Mobile/survivable command posts
- **CRADAs**
  - Leverage agreements developed by CCDC C5ISR Center
- **Technical Exchange Meeting**
  - June 2021, date TBD



- **Evolution of the Army's Presence in Theater**
  - Adjust portfolio, workforce, and resources to align to current mission and need
- **Reliable and Consistent Supply Chain Management**
  - Vigilance with supply chain risk management practices
  - Ensure partnerships with trusted suppliers and sub-suppliers
- **Strategic alignment with Joint Community**
  - Better information sharing, leveraging of Joint resources, expanded use of data standards



- **Transition to Sustainment of Technologies**
  - Influence life cycle sustainment planning in early R&D phase
- **Divestiture Decision-Making**
  - Army resource stewardship
- **Field Support**
  - Expand Logistics Assistance Representative capabilities
- **Obsolescence Mitigation**
  - Tech Data Escrow
  - Additive/advanced manufacturing
- **Organic Industrial Base**
  - Public-Private Partnerships
  - Agile acquisition process with industry



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# Test and Evaluation Center of Excellence

★ **BG James J. Gallivan**  
Commanding General  
U.S. Army Test and Evaluation Command





# Past-Year Accomplishments

- Launch of ATEC Civilian Careers website and Yello Job Board
- Established Enterprise Coaching and Mentorship Program
- Established Enterprise Recruitment and Educational Partnership Cadres
- Accumulated over 1.5 Million test workload hours on 230 active projects in direct support of Cross-Functional Teams / Army Futures Command
- Hosted the inaugural Project Convergence (PC20) Campaign of Learning
- Army Evaluation Center conducted first ever independent assessment of Project Convergence Concepts and Capabilities
- Aberdeen Test Center created a Virtual Test and Advanced Electronics Directorate



# Goals/Focus Areas for Next 1-3 Years

- Developing Enterprise Virtual Acculturation/On-Boarding programs (Army 101, ATEC 101)
- “Investing In You” campaign for professional development opportunities
- Continue to Excel in our Direct Support mission to Army Futures Command
- Fully support Army Modernization Efforts and the AFC campaign of learning for Project Convergence 21 and beyond; expanding to multi-venue hosting and whole-of-ATEC effort to match the right venue with the right capability at the right time
- Creation of a Data Sciences Directorate (or Division) to address expanding challenges with data analytics, cloud-based platforms, and other data sharing mechanisms
- Explore the capabilities of ATC’s Virtual Test and Advanced Electronics Directorate for developmental testing of autonomous systems in a digital or virtual environment



# Challenges

## PROPERTY

- Sustain vast array of test capabilities across the Command
- Sustain real property (i.e. buildings, infrastructure)

## PERSONNEL

- New skill sets to meet Army Modernization
  - Artificial Intelligence (AI) & Machine Learning
  - Data Science & Analytics
  - Cyber security
- Earlier involvement of Testers in Experiments & Soldier Touch Points

## PROCEDURES

- Data Collection, Reduction, and Analysis
  - Moving data to the cloud for Enterprise use
  - Importance of visualization of data for expedited decision-making
- Modeling & Simulation to include Application of AI to T&E
- Simulations such as digital twinning of ATC road courses for autonomous ground vehicle testing at APG



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# Chem Bio Center of Excellence



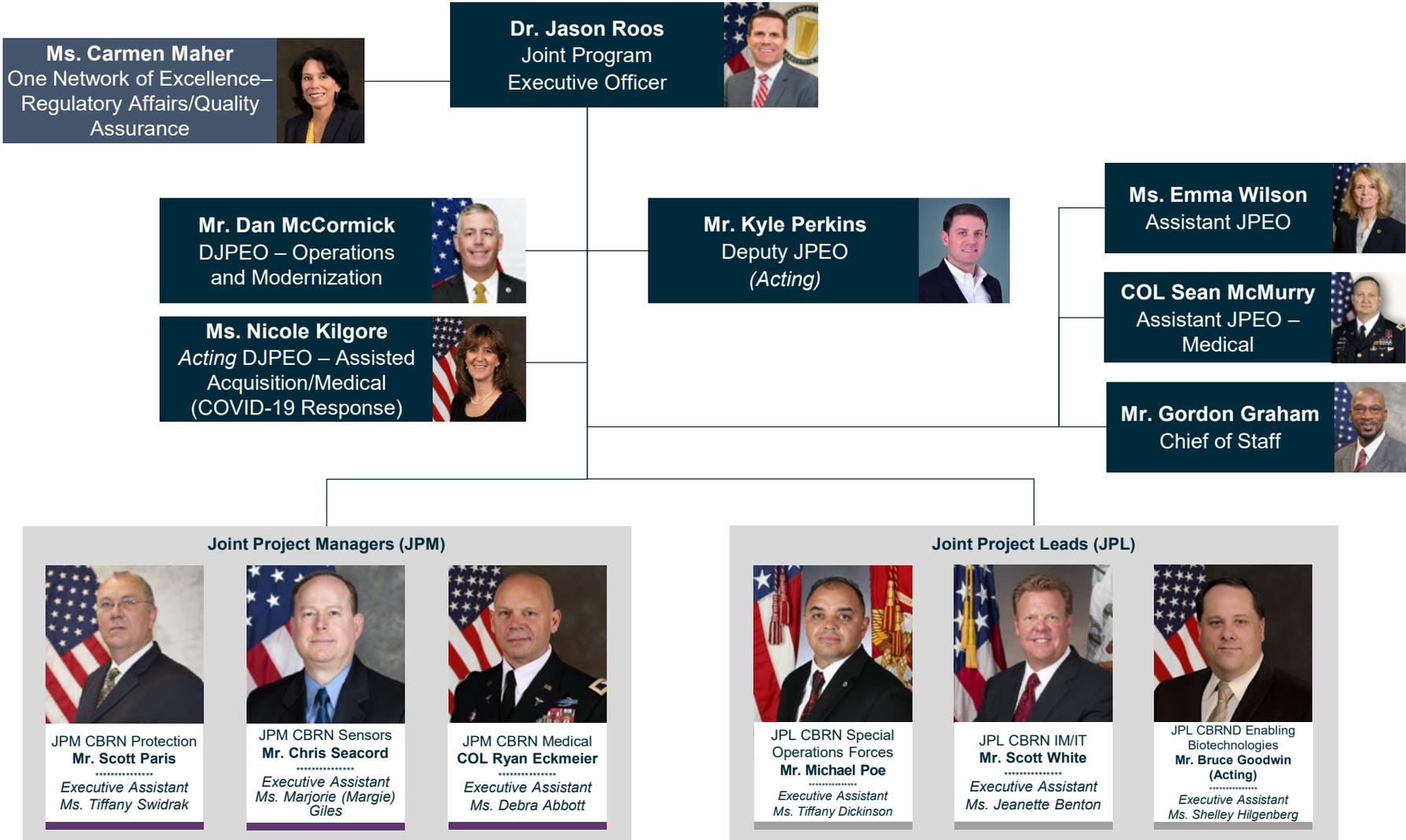
**Dr. Jason W. Roos**

Joint Program Executive Officer for Chemical, Biological,  
Radiological, and Nuclear Defense





# Leadership Updates





# Accomplishments and Highlights

## ➤ **Significant Support to COVID-19 Federal Response Operation**

- ACC-APG partnership was key to Assisted Acquisition support success
- Vaccines, Therapeutics, Diagnostics, PPE, Enabling Capabilities
- Infographic on JPEO website and social media

## ➤ **Despite the tremendous challenges COVID-19 posed JPEO-CBRND**

- **Fielded over 290,000 products/systems**
- Fielded over 400 **chemical and radiological detectors** to units across the globe in response to several Operational Needs Statements
- Accelerated fielding of 9 **Analytical Laboratory System-Modification Work Order** systems to National Guard Civil Support Teams (CST) between August and October
- Early fielding of **Next Generation Diagnostics System (NGDS)** for Full Operation Capability (85% of Army's diagnostic capability; 94% of total Joint Diagnostic FOC)
- Delivered Capability Set 2.0 for **Stryker Nuclear Biological Chemical Reconnaissance Vehicle (NBCRV)** Sensor Suite Upgrade
- Procured and delivered **Rapid Opioid Countermeasure System (ROCS)** 2mg naloxone (also known as Narcan®) autoinjector to National Guard Bureau
- Accelerated fielding of 12 **Chemical Biological Aircraft Survivability Barrier (CASB) negative pressure transportation systems**, protecting critical Special Operations aircraft that cost up to \$90 Million dollars each and cannot be decontaminated



# Future Focus: Transformational Capabilities

- **The JPEO-CBRND will reset the Joint Force by 2030 by integrating technological advances into a suite of modernized CBRND capabilities that enable warfighter operations and situational understanding unencumbered by a CBRN environment. We will achieve this by:**
  - Tracking and understanding the foundational technology that supports our portfolio and building transition pipelines from our science and technology partners in government, industry, and academia
  - Maximally integrating CBRND capabilities into the warfighter's existing environment and platforms
- **Specifically, JPEO-CBRND will focus on the following three areas**
  - Modernize Biological Defense
  - Integrated Early Warning
  - Unencumber the Warfighter



# Modernization Focus Areas and New Starts

## ➤ **Modernize Biological Defense**

- Countering Emerging Threats Rapid Acquisition and Investigation of Drugs for Repurposing (CET RAIDR) (FY22)
- Biological Defense Innovation Program (BDIP) (FY23)
- Plague Monoclonal Antibodies (PLG MAB) (FY24)
- Antiviral Oral Therapeutics Program (AVO TX) (FY25)

## ➤ **Integrated Early Warning**

- CBRN Support to Command & Control (CSC2) (FY22)

## ➤ **Unencumber the Warfighter**

- Modernize the Mask
  - Ground Mask MWO (FY24)
  - Advanced System for Protection & Integrated Reduction of Encumbrances (ASPIRE) (FY25)
- Hazard Mitigation
  - CBRN Covers Coatings and Protective Overlays (C3PO) (FY21)
  - Service Equipment Decontamination System (SEDS) (FY21)
  - Wide Area Decontamination System (WADS) (FY22)
  - Tactical Contamination Mitigation System (TCMS) (FY22)
  - Next Generation Personnel Decontamination (NGPDC) (FY25)

## ➤ **JE-CLaSS Follow-on Multiple Award IDIQ**

- 4-year Base with 4-year Option, plus 3 years to complete orders
- Projected Award: January 2022
- Available to the CBRND Enterprise for use, including TACOM



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# Research and Development Center of Excellence

**Mr. Seth Spoenlein**

CTO-Senior Scientific Technical Manager  
Combat Capabilities Development Command



**DEVCOM**



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# DEVCOM

## The Past Year

*COVID Response*

*Project Convergence*

*Ignite*



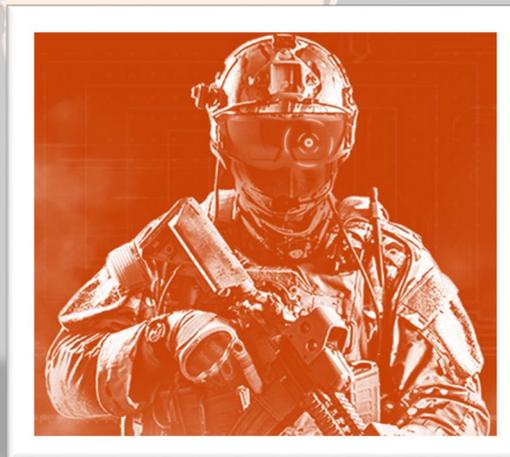


# DEVCOM PRIORITIES FY21



## Project Convergence

*The Army's Campaign of Learning*



## S&T Outputs

*Delivery to the 31+4 Signature Efforts*



## Future of Work

*Maintaining a Competitive Edge for the Future*



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# Public Health Sciences Center of Excellence



**COL Jennifer J. McDannald**  
Director  
Army Public Health Center



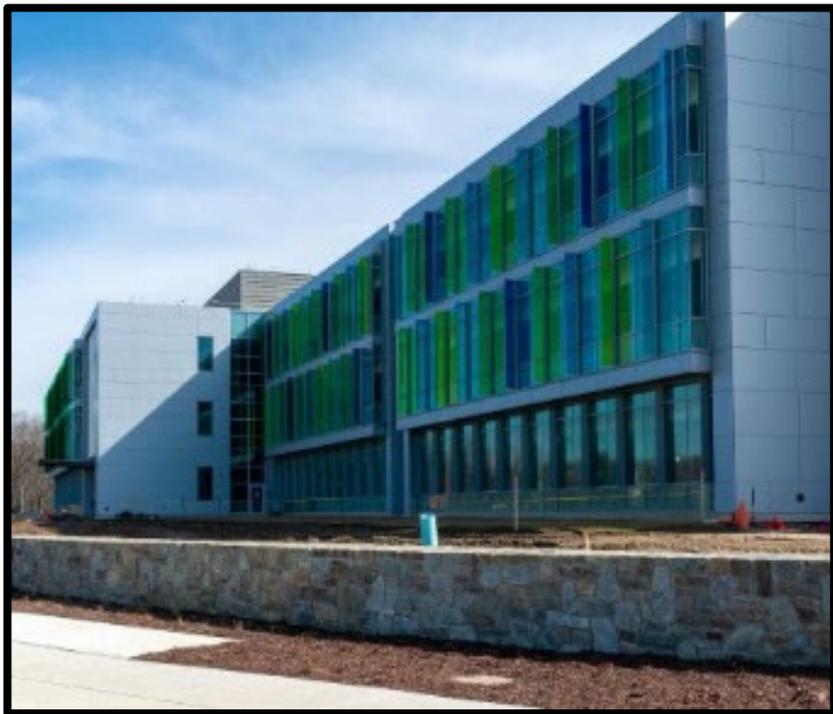


# Past-Year Accomplishments

- COVID-19
  - Task Force: 1500 RFIs from 190 organizations
  - Army Town Halls: SME Participation
  - Pooled surveillance: 24,000+ samples analyzed
  - Piloting COVID-19 surveillance in wastewater
- Behavioral and Social Health Outcomes Program
  - VCSA People First Solarium
  - SECDEF Independent Review Commission on Sexual Assault in the Military
- Health of the Force Report
- PFAS and Fluorine-free AFFF Toxicological Studies
- Blast Overpressure Studies
- APHC Support for Study of the Army Combat Fitness Test



# Short-Term Focus Areas



- New APHC Laboratory
  - Beneficial Occupancy Date: Sep 21
  - Ribbon Cutting Ceremony: 26 May 22
  - Functional Occupancy Date: Apr 23
- Transition of APHC to the Defense Health Agency



# Support Requests

## ➤ Facilities

- Maintain E-2101 until 2025
- Turn-in E-1942 due to flooding and mold
- Failing Administrative Buildings



Asbestos tiles and limited storage space  
(storage cabinets in the hallway)  
E-1675



Cement asbestos walls – deteriorating and allow for  
vermin intrusion and poor HVAC control  
E-5158



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# APG Garrison



**COL Timothy E. Druell**

Commander

U.S. Army Garrison Aberdeen Proving Ground





# Priorities and Focus Areas

## Sec Army



- People
- Readiness
- Modernization
- Reform

## CSA



- People
- Readiness
- Modernization
- Reform

## AMC



- People
- Readiness
- Modernization
- Reform

## IMCOM



- Soldier / Family Programs
- Infrastructure
- Support to Training
- Protection

## Army Quality of Life Focus

Housing

Healthcare

Child Care

Spouse Employment

PCS Moves

Support & Resilience

## Army Materiel Command (AMC) Lines of Effort

Soldier, Civilian & Family Readiness

Installation Readiness & Training Support

Industrial Base Readiness

Munition Readiness

Strategic Power Projection

Supply Availability & Equipment Readiness

Data Analytics & Logistics Information Readiness

## Installation Management Command (IMCOM) Enduring Priorities

### Infrastructure



### Protection



### Support to Training



### Soldier and Family Programs



# Execution and Delivery



Secretary of the Army  
Chief of Staff of the Army



Commander, AMC



Commander, IMCOM



Army  
Environmental  
Command



ACOM, ASCC  
Commander

IMCOM Directors  
Tier II

Senior  
Commander

Local  
Hospitals

City  
Governments

State  
Governments

Public  
Schools

Congressional  
Engagements

Civic  
Organizations

Environmental  
Groups

Chamber of  
Commerce

Volunteers

Utility  
Companies

Businesses

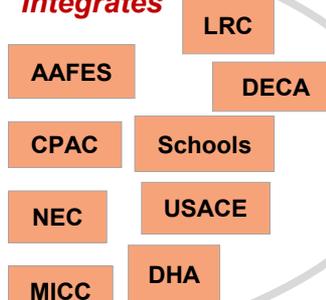
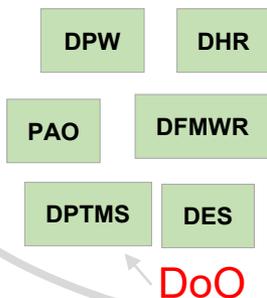
Private Sector  
Employment

*IMCOM  
Delivers*

Garrison  
Commander

*IMCOM  
Integrates*

*Garrison  
Commanders  
synchronize  
installation  
services on behalf  
of Senior  
Commanders  
in accordance with  
Army priorities*



DoO

- ACOM: Army Command
- ASCC: Army Service Component Command
- DES: Director, Emergency Services
- DPTMS: Director, Plans, Training, Mobilization and Security
- DPW: Director, Public Works
- DHR: Director, Human Resources
- DFMWR: Director, Family, Morale, Welfare, Recreation
- PAO: Public Affairs Officer
- AAFES: Army/Air Force Exchange Service
- DeCA: Defense Commissary Agency
- CPAC: Civilian Personnel Advisory Center
- NEC: Network Enterprise Center
- MICC: Mission & Installation Contracting Command
- LRC: Logistics Readiness Center
- USACE: U.S. Army Corps of Engineers
- DHA: Defense Health Agency
- DoO: Directorate of Operations (unique to ID-S and APG)

**A Team of Teams Supporting Readiness & Quality of Life**



# Focus Moving Forward

## Last Year FY 20

- 90 Projects on Annual Work Plan (\$42.3M)
- Contaminated Demolition Program

## Focus / Goal FY21-23

- Annual Work Plan, 180 Projects (estimate)
- Contaminated Demo Program
- 1 x UMMCA Opportunity
- 1 x MILCON Opportunity

### Assess Needs

#### People

Adapt Quality/Functional Facilities  
Community Partnerships  
Safety (Operations and Community)

#### Readiness

Operationalize Installation  
Expand Protection  
Resilient Systems

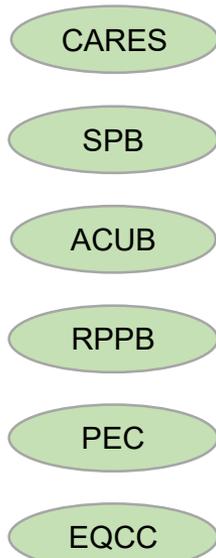
#### Modernize

Information Technology  
Transform Installation Operations  
Community Partnerships  
Safety (Operations and community)

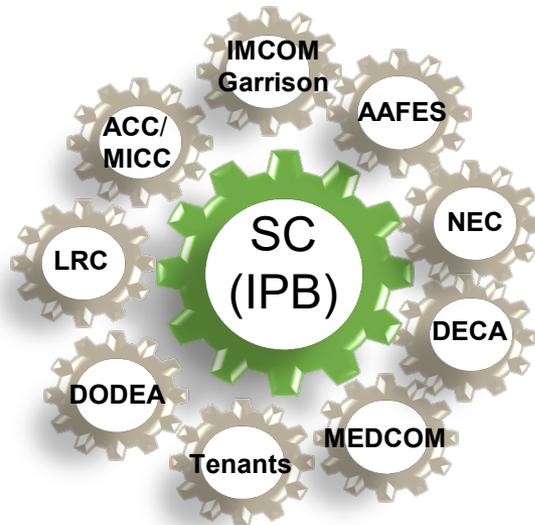
#### Stewardship

Preserve Natural Resources  
Sustain the Mission  
Remediate Contaminants  
Implement Modern Technologies  
Risk-Informed Metrics

### Feeder Boards



### Installation Planning Board(IPB)



### Annual Work Plan/MILCON

#### People

Attract, Retain and Enable People

#### Readiness

Project Power  
Sustain Operations

#### Modernize

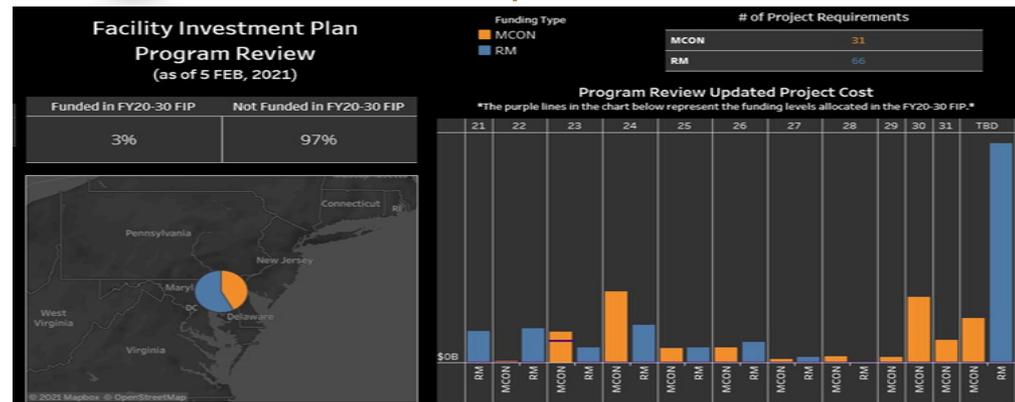
Modernized Installations  
Mission Adaptable

#### Stewardship

Healthy Working/Living Environment  
Energy Efficient  
Environmentally Resilient

## ENABLERS

Analytic: PAVER, SABER Tool  
Partnership: USACE, Local Industries





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