

Headquarters U.S. Space Force

Production Corps Space Industry Days

22 Oct 2020

**Mr. Cordell DeLaPena
PEO Space Production Corps**



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Agenda

- **Production Corps Overview**
- **Awarded and Upcoming Contracts**
- **Production Corps Key Initiatives**
 - Transition Task Force
 - Lockheed Martin (LM) 2100
 - Digital Engineering



What is the Production Corps?

- **The Production Corps is focused on execution and delivery of SMC space systems**
- **We are chartered with delivering capabilities to the warfighter, our allies, and stakeholders**
- **We function in concert with the other SMC Corps but execute with autonomy reporting to a single PEO**
- **We are focusing on smart initiatives to define approaches to deliver capabilities faster to the battlespace**

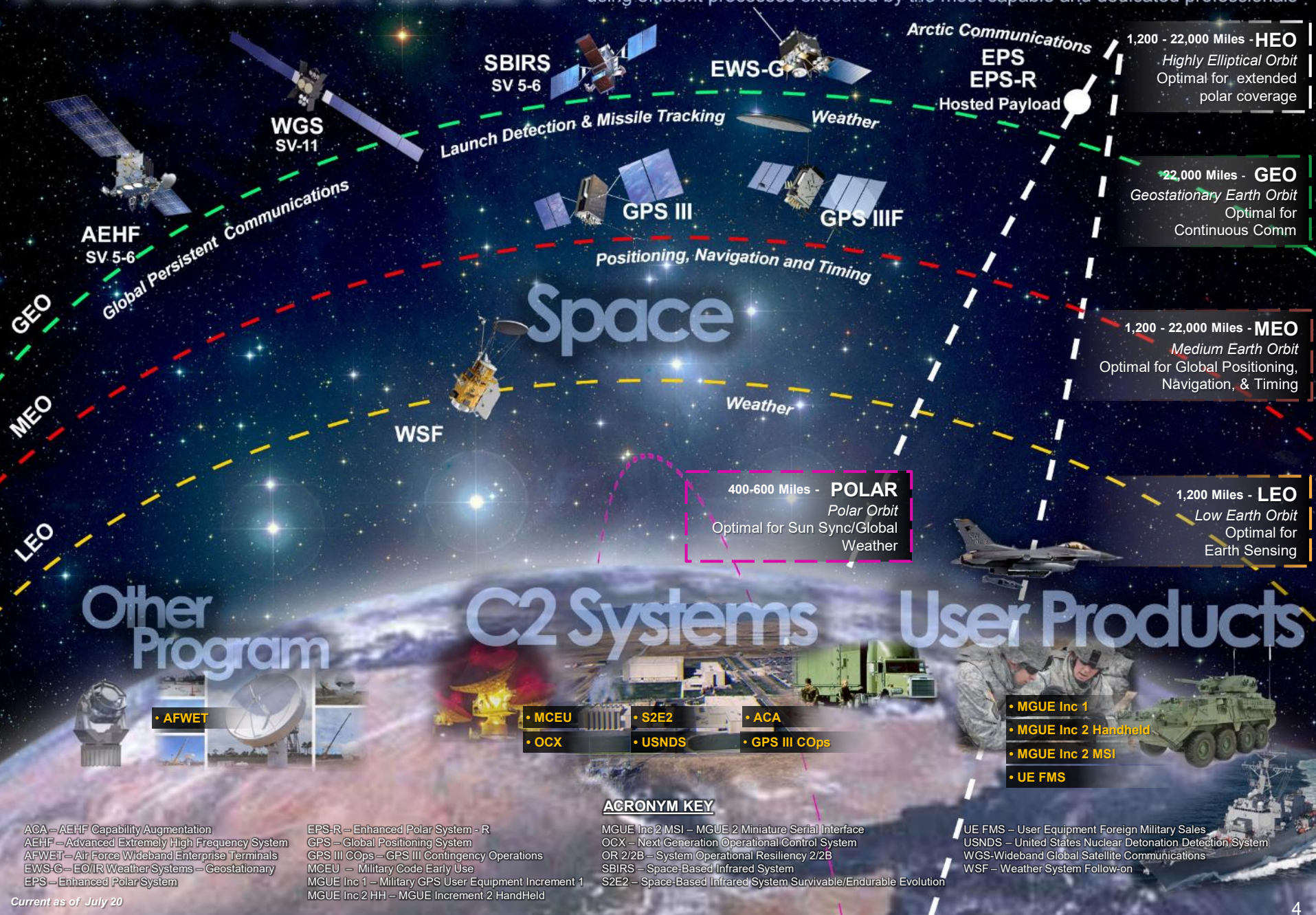
Production Corps is forging the future of space

PRODUCTION CORPS

MISSION:

The Production Corps delivers capabilities to the Warfighters and our allies using efficient processes executed by the most capable and dedicated professionals

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Production Corps By the Numbers

■ People:	862
■ MTA Efforts:	2
■ Programs	21
■ Open APB Milestones & MTA Guardrails:	17
■ Launches in 2020:	3
■ Launches in 2021:	2
■ Satellites in production:	16
■ C2 Systems:	6
■ Fielded User Equipment:	Millions
■ FY21 Budget:	\$2.3B
■ FY21 FYDP:	\$13B



Production Corps Leadership Team

Corps Leadership



PEO and Director Space Production – PEO/SpP

Mr. Cordell DeLaPena

Deputy Director

Mr. Luke Schaub

IMA to the PEO/Director - PCR

Col Christopher Jordan

Transition Director - PCT

Col Heather Anderson

Chief Of Staff - PCZ

Mr. Joseph Barsotti

Executive Officer - PCX

Lt Billy Bautista

Aerospace

Mr. Steven Leontis

Program Execution

LEO Division - PCW

Chief- Ms. Charlotte Gerhart

- EWS-G (Mr. David Betz)
- WSF (Lt Col Wilfredo Ruiz)

MEO Division - PCM

Chief - Col Edward Byrne

- GPS III (Lt Col Margaret Sullivan)
- GPS IIIF (Ms. Kate Coens)

GEO/Polar Division - PCG

Chief - Col John Dukes

- AEHF 5/6 (Mr. Marcus McInnins)
- EPS/EPS-R (Mr. Raj Basu)
- SBIRS 5/6 (Lt Col Ryan Laughton)
- WGS (Maj Shawna Matthys)

C2 Systems Division - PCC

Chief - Ms. Barbara Baker

- AEHF Ground
 - ACA (Maj Eric Lum)
 - OR 2/2B (Maj Eric Lum)
- GPS III COps/MCEU (Lt Col Grant Spear)
- S2E2 (Lt Col Eric Neubert)
- USNDS 7 (Mr. Greg Smith)
- OCX* (Lt Col Matthew Schmunk)
- OCX Block 3 (Lt Col Grant Spear)

User Products Division - PCU

Chief - Col Clifford Sulham

- MGUE 1 (Lt Col Joseph Christensen)
- MGUE 2 (Lt Col Darrell Grob)
- UE FMS (Mr. Eddie Emile)

• AFWET** (Mr. James Ware)

Functional Support

Chief of Contracts - PCK

Mr. David Block*

Chief of Finance - PCF

Mr. Lucas Sprenger

Chief of Engineering - PCE

Mr. John Morris

Product Support Manager - PCL

Mr. Russ LaBelle

Chief of Operations - PCO

Mr. John Traversa

* Reports to PEO/SP but resides in Production Corps for OTE

** Report to PEO/SpP for acquisition decisions. Reports to other orgs for OT&E



Production Corps Successes



**Cops Operational
Acceptance 27 Mar**
(CY20 SMC commitment)



**EPS-R completed Control and
Planning Segment delta Critical
Design Review 25 Jun and
Gateway Preliminary Design
Review 24 Sep**



**MGUE Inc 1 achieved Joint
Light Tactical Vehicle PEO
Certification, 26 Jun; MGUE
Inc 1 completed Stryker
Development Test**



**GPS III SV03 launched 30
Jun; LCS successfully
supported; Operationally
accepted on 27 Jul**



**WGS 11+ Virtual
Preliminary Design
Review successfully
completed on 1 Jul**



**GPS IIF received
Milestone C
approval on 14 Jul;
Awarded SV13-14
on 1 Oct**



**AEHF-6 launched 26
Mar and Payload
Testing completed on
17 Aug**



**MCEU OTRC completed 19
Aug; Completed HW/SW
upgrades OCX 27 Jul and
completed final M-MSTIC
install on 30 Jul**



**EWS-G received OA and
IOC on 1 Sep**



Upcoming Milestones

AFL/READY FOR OT

- GPS III SV04 Launch
- **SBIRS GEO-5 Delivery***

TRANSITION TO THE WARFIGHTER

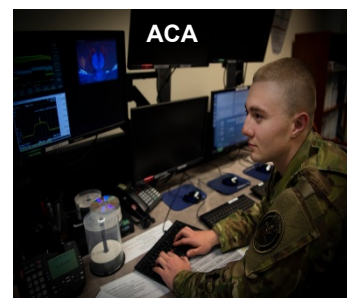
- Complete MCEU OA
- **Complete AEHF 6 OA***
- Deliver OCX Monitoring Stations
- Complete ACA 4 OA

ACQUISITION COMMITMENTS

- Award MGUE Inc 2 MSI
- Convert MGUE Inc 1 RTX contract to FFP

PARTNERSHIPS

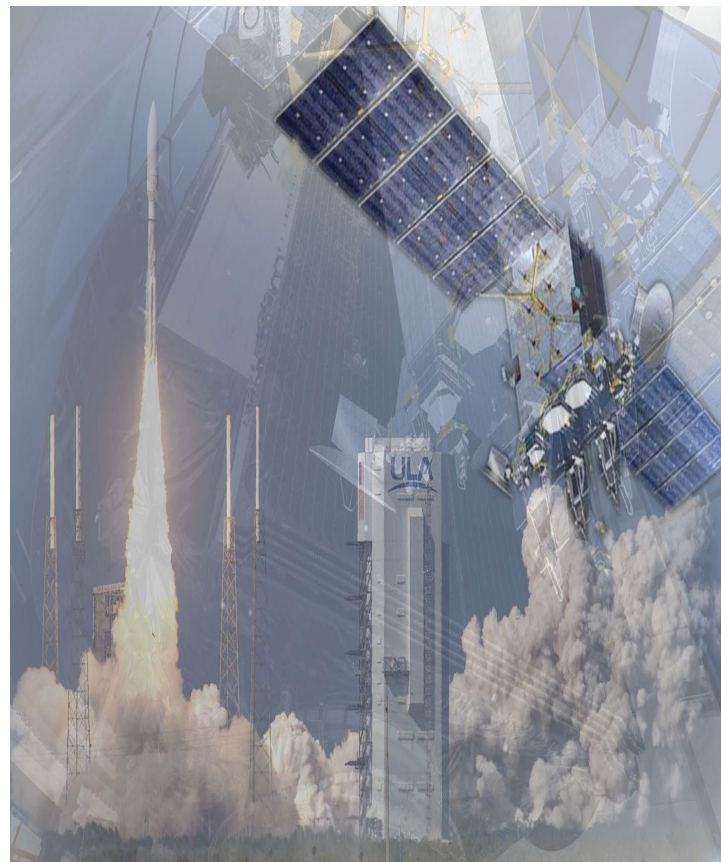
- Complete 1st M-Code FMS





AEHF Nearing Completion

- Completing a 27 year partnership with Lockheed Martin on Milstar and the Advanced Extremely High Frequency satellites
- AEHF will complete with SCA of SV6 on 29 Oct
- Capabilities delivered to warfighter
 - 10X the throughput of Milstar
 - Provides Extremely High Frequency uplink, Super High Frequency downlink and crosslink functions for Low Data Rate, Medium Data Rate and Extended Data Rate operations.
 - Continuous 24-hour coverage between 65 degrees north and 65 degrees south latitude
 - Data rates from 75 bits per second to approximately 8 megabits per second



AEHF is an example of the government/industry partnership making a difference to the warfighter



Awarded and Upcoming Contracts

Awarded

Contract	Contractor	Contract	RFP Status	Target Award Date	Value
GPS IIIF	Lockheed Martin (SV13/14)	Fixed Price Incentive Firm Target	Complete	6-Oct-20	\$511M
OCX	Raytheon (HRIP)	Cost Plus Incentive Fee	Complete	24-Mar-20	\$359M
IAC MAC	BAH (Technical Support)	Cost Plus Fixed Fee	Complete	10-Aug-20	\$160M
NIWC	BAH (Tech Support)	Cost Plus Fixed Fee	Complete	23-Oct-19	\$103M

Upcoming

Contract	Contractor	Contract Type	RFP Status	Target Award Date	Value
MGUE Inc 2 Miniature Serial Interface (MSI)	Full & Open Competition; award up to 3 contracts	CPIF/AF/FF	Released 1QFY20	1QFY21	~\$700M total
MGUE Inc 1 Contract Conversion	Raytheon Convert all remaining work on cost plus to FFP contract structure	Firm Fixed Price	RFP Released 31 July 20	18-Dec-20	~\$120M
US Nuclear Detonation Detection System 7	Sandia Nat'l Lab & Los Alamos Nat'l Lab (FFRDCs)	Cost Reimbursable	On Hold	1QFY22	TBD
OCX 3F	Sole Source Raytheon	CPIF/CPAF	Released 4QFY20	2QFY21	TBD Pending Negotiations
MGUE Inc 2 Hand held Risk Reduction	3 SpEC OTA vendors	Firm Fixed Price	Phase 1 Objective B Awarded	Phase 1 Objective C – 3QFY23	\$83.7M for Phase 1; \$22.1M for Phase 2 Development/Production Readiness



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Key Initiatives

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Transition Task Force (TTF)

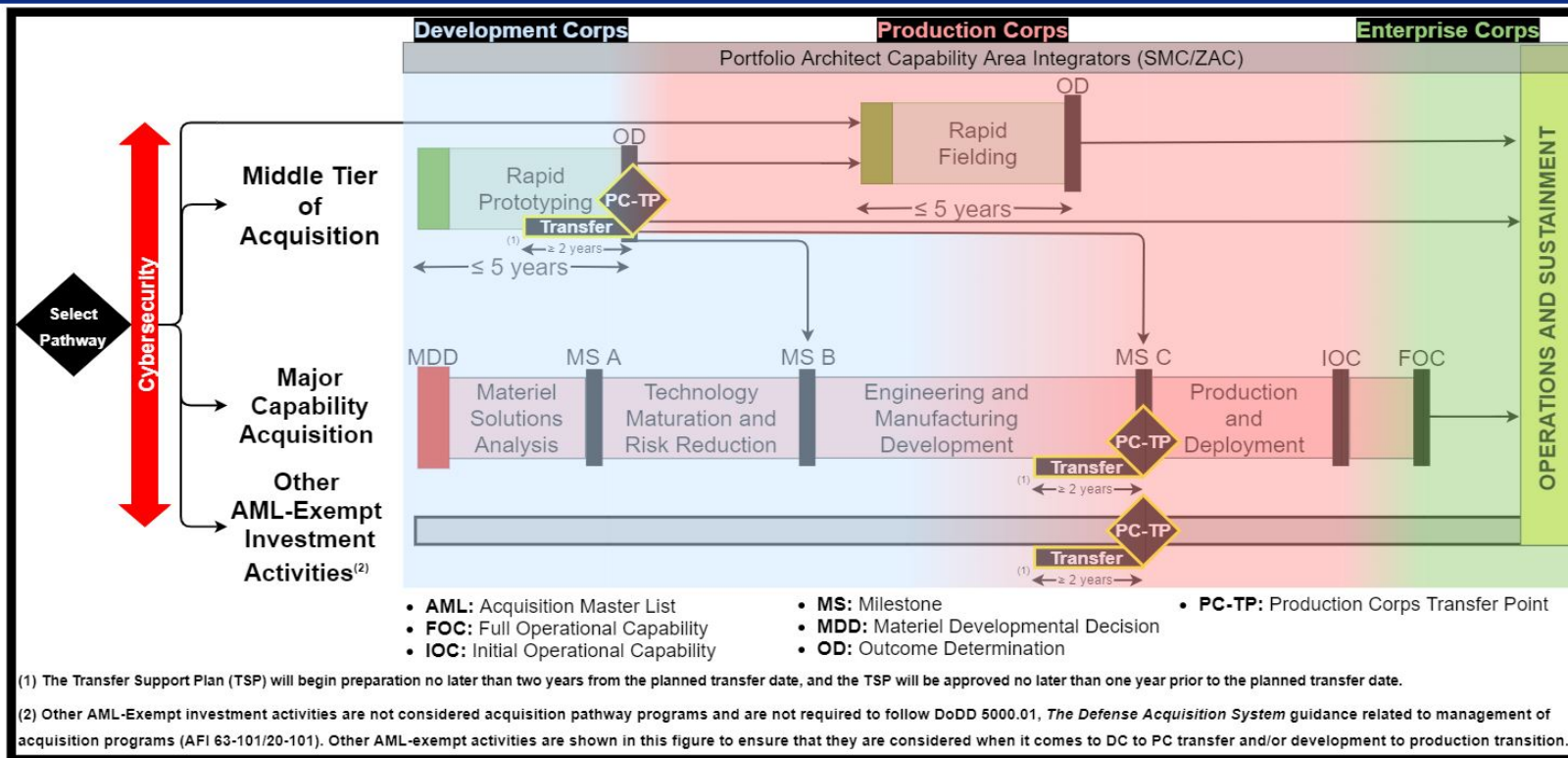


Background

- PC initiative with PEO signed charter - October 2019
 - Scope: Development Corps (DC) to Production Corps (PC) focused; other Corps transfers considered but not part of the charter
 - Identified two use cases to assess functionality across different program acquisition types
- Objectives
 1. Develop a set of guidelines for transition plans to include recommended content that is to be tailored appropriately for the program
 2. Provide recommended approval authority and process for transition plans
- Participants
 - ~50 personnel across AC, DC, PC, EC, & ZA
 - Significant support across all functional areas
 - Finance, contracting, personnel, product support, etc.
- Deliverable Reviews
 - 318 formal comments & many more informal comments adjudicated
 - Final functional support 3-letter coordination completed 16 October
- Major Challenges
 - Acquisition guidance
 - COVID-19 collaboration challenges



DC to PC Transfer & Transition Framework



Identified 3 main acquisition pathways:

- MTA – PC-TP no later than Outcome Determination of Rapid Prototyping
- MCA – PC-TP no later then MS C
- Other AML-Exempt Investment Activities – PC-TP when success criteria met & documented

Flexible to meet the needs, requirements, and constraints of program execution



Way Forward

- *SMC DC to PC Transfer & Transition Guide* will be reviewed by DC and PC Front Office, and then sent to DC and PC PEO for review and signature
 - Once signed, guide and related resources will be posted to APEX website for access and implementation by all DC and PC Corps personnel
- Establish Office of Primary Responsibility (OPR) for guide and other transfer and transition resources:
 - PC
 - Chief of Staff (SMC/PCZ)
 - DC
 - Pre-production programs – Deputy Director, Space Development Corps (SMC/DC)
 - Innovation & Prototyping programs – Director, Innovation & Prototyping Directorate (SMC/DCI)



Lockheed Martin (LM) 2100



Evolving Our Organization: LM2100 Pacesetter Overview

- **BACKGROUND:** Several SMC satellite programs using the same Lockheed Martin satellite bus independently implemented different standards, specifications, and processes. Created duplication, additional overhead, increased cost & schedule.
- **SOLUTION:** Established joint initiative between SMC and Lockheed Martin in 2019. “LM2100 Pacesetter Project” establishes common satellite hardware, technical requirements, processes, and reviews
 - NGG OPIR and GPS-III F set as pathfinders
 - Exercise GPS-III F SV13 option using common bus
- **LM2100 Pacesetter Goals:**
 - Decreased cycle time and program costs
 - Reduce program risk
 - Enable line replacement units
 - Cross-Corps & multi-stakeholder collaboration





LM2100 Pacesetter Project

As of 14 Oct 2020

Objective: Align satellite bus unit production requirements across SMC LM2100 programs enabling commonality and cross program hardware interchangeability

Progress/Accomplishments:

- 31 Oct 2019 – PC, DC and Atlas/ENE approved common LM2100 Pacesetter Requirements Documents
- 25 Feb 2020 – Agreed on Pacesetter Metrics (PEO Meeting)
- 28 Feb 2020 – Complete NGG OPIR documentation gap analysis and Compliance Document List redline
- 25 Mar 2020 – Received initial LM2100 Pacesetter Metrics and establish reporting cycle
- 21 Apr 2020 – GPS IIIF contractual modification to incorporate commonality into baseline
- 08 May 2020 – Forged agreement on common MIPS from program recommendations
- 08 Jun 2020 – Conducted block Pacesetter delta QRB for GPS-IIIF
- 30 Sep 2020 – Send program QALI establishing common DCMA MIPS (QALI for each Program)
- 08 Oct 2020 – NGG OPIR contract definitization, incorporating Pacesetter complete

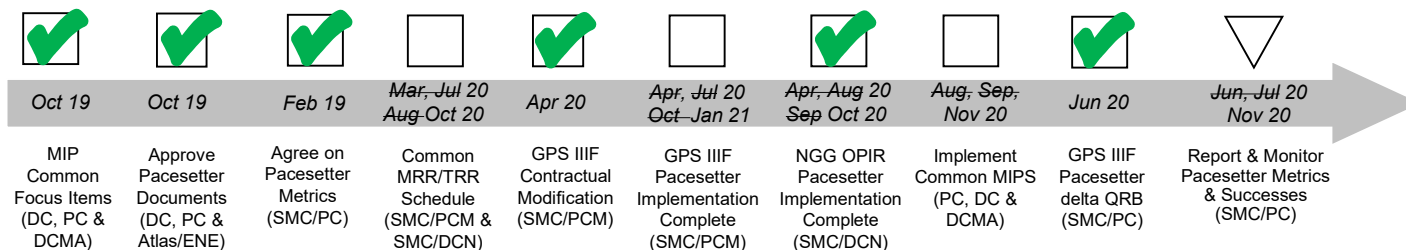
Next Steps:

GPS IIIF:

- Jan – Implement Pacesetter on GPS IIIF program; technical effort proceeding based upon LM2100 agreed requirements
(approve remaining CDRLs: PMP, TRD, EMI / EMC)

Common:

- Oct – Finalize Long-Term MRR/TRR schedule for common components
- Oct – Metrics Status Brief: Dry-run to SMLs, then to DC and PC PEOs. PEO meeting scheduled 29 Oct, 1430-1600 Pacific
- Nov – Implement common MIPS through DCMA (Common Focus Memo, MOA, QALI, & LOI)





Digital Engineering



Production Corps Digital Transformation

Current Status

Near-Term Objective: Foster application of Digital Engineering (DE) practices in Production Corps, collaborate with and align to Center initiatives

Long-Range Vision: Fully leverage the USSF Digital Engineering Ecosystem to modernize the production phase of our acquisition lifecycle and rapidly deliver warfighting capabilities

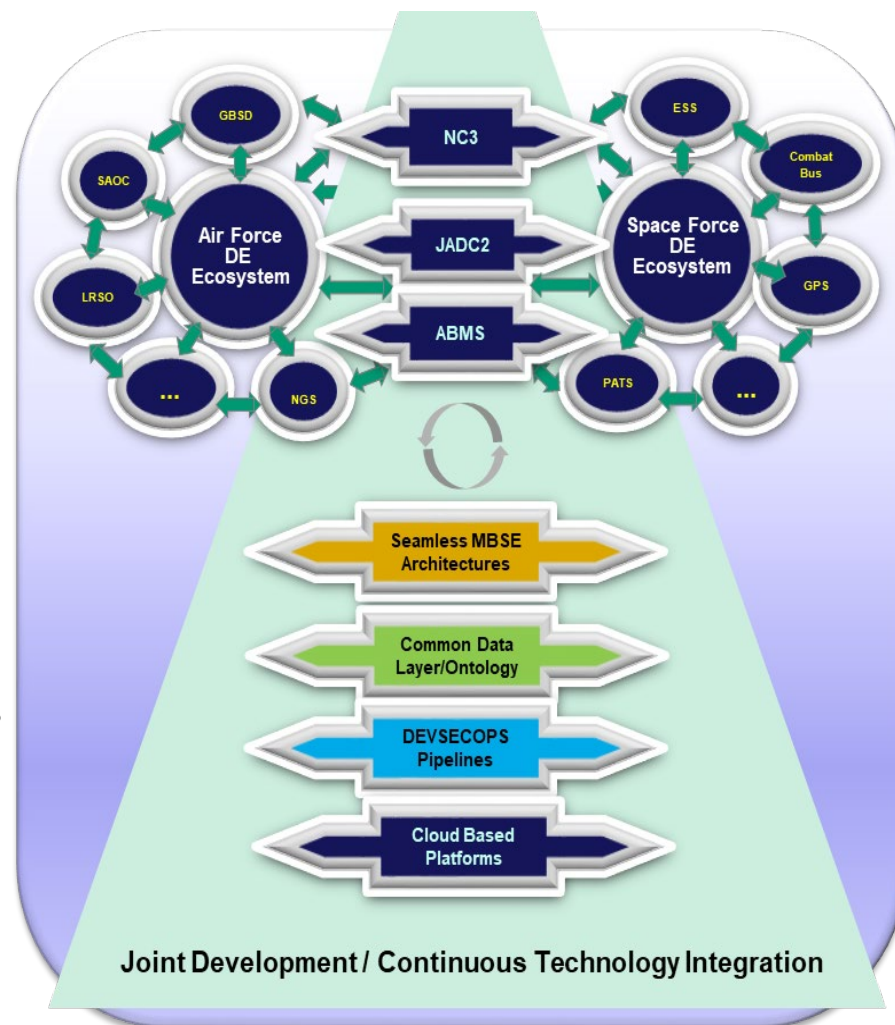
Progress/Accomplishments:

May – Provided Atlas/EN feedback on SMC Digital Engineering Guidebook (Aero, MITRE, BAH)

Jun – Initiated Model dev to capture SMC Capabilities, Use Cases, Requirements, & Roadmap

Jul – Update DoD/AF requirements for OCX

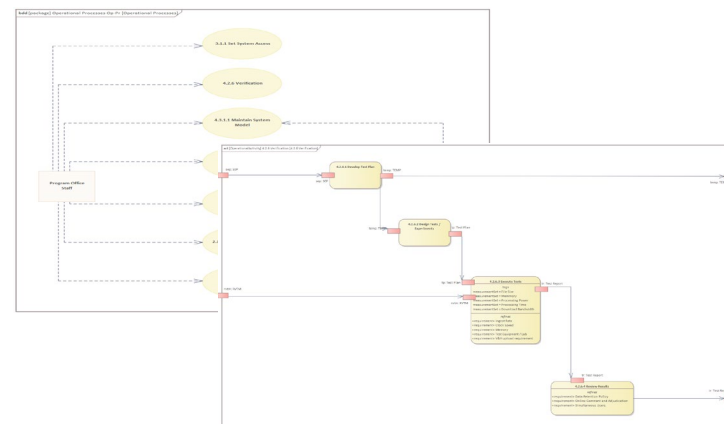
Sep – Developed Virtual Manufacturing & Test Readiness Review Process using Confluence



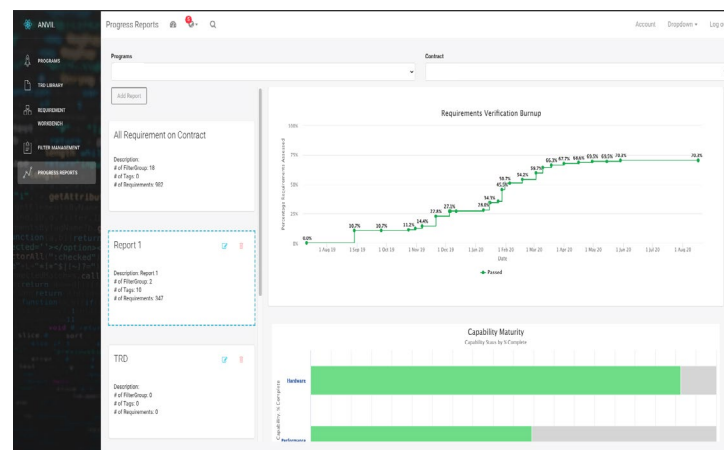


Production Corps Digital Transformation Way Ahead

- Develop DE Use Cases across range of PC programs
- Digital Thread Identification: Identify Digital Threads required to support PC processes
- Containerization: Coordinate with Iron Bank to understand process to harden/containerize Minimum Viable Products or to host PC-specific products (e.g. Matlab, Simulink) in cloud environment
- Develop PM Dashboards to provide relevant Program metrics
- Assess Program Lifecycle Management tool workflows and processes needed to conduct digital CCB's, technical reviews, audits and integration
- Coordinate with Digital Engineering Working Group to develop Space Force Style Guide



PC Use Case Requirements Derivation



Metrics Dashboard



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Questions



Production Corps – Forging the Future of Space!

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