

#### **G S A W** 2 0 2 1



### **GSAW 2021**



## Space Command & Control Program Kobayashi Maru

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# Deploy operationally useful software that users love

- Goal



- Kobayashi Maru (KM) is the Space Force's DevSecOps Pathfinder Program delivering Space C2 capabilities to DoD, Joint, & Coalition Operation Centers
- Comprised of Mission-Focused Products Lines and Enabling Enterprise Infrastructure
  - Battle Management Command & Control (BMC2) NSDC-focused capabilities
  - Space Domain Awareness (SDA) Applications to enable SPADOC decommission
  - DAV Data Analytics & Visualization
  - Theater/Coalition Support Combined Space Operations Center (CSpOC)-focused capabilities
  - DevOps Infrastructure DevSecOps pipelines to enable Continuous Integration/Continuous Deployment (CI/CD) and agile development
- Enterprise Engineering provides overarching systems engineering, guides architecture maturity, and manages agile requirements processes



<u>Relevant</u> and <u>Timelv</u> Operational Space C2 Capabilities for Theater Support and the Protect-and-Defend Missions





- Previous software development programs required years to produce operationally accepted applications for the warfighter – often outdated and late to need
- Waterfall software development was unable to support rapid development, rapid deployment requirements
- Kobayashi Maru (Space C2) has established an Agile Software Development program to deliver warfighting capabilities at the speed of relevance
- Kobayashi Maru's Acquisition Strategy captures the approach to plan, acquire, and execute following the new Software Acquisition Pathway for the DoD with modifications based on experimentation and learning in 2020



Space Common Operating Picture (COP)







KM Supports Internet of Military Things

- Currently supports Coalition, Joint, and other Mission Areas
- Supported Advanced Battle Management System (ABMS) exercises
- Ecosystem is scalable and extensible due to its open and containerized architecture











- Software can be delivered to the warfighter quickly using industry's best software practices
  - Focus on if the PM is *delivering* value to the warfighter rather than traditional programmatic metrics
  - Allow for a strategic-level acquisition strategy with tactical-level reports that account for the program's dynamic nature
- Independent test oversight can be embedded in the agile development process
  - Test strategy guides & identifies where DT and OT can plug in
  - Continuous operator and tester involvement is resource intensive at the beginning, optimizes over the program life cycle, and efficient when DevSecOps is adopted by the entire community



Space Desk





- Space Board (aka Metroid) achieved ops acceptance (OA) a mere 6 months after team stand up
- In a single day, ATLAS was able to shift LEO-proliferation work to the left a year to address 18SCS UON with zero change/scope costs to the government
- SDCCS (Space Domain Configuration & Control System) application provides advanced onorbit I&W analytics and customizable space domain visualization: OA signed August 2020
- STAR Delta (P) Det 4 & 47 CTS conducted a Cooperative Vulnerability & Penetration Assessment (CVPA) on Space C2, 19-28 Oct 2020
  - Test was conducted completely remotely (program first!)
    - No time lost due to travel
    - Slashed TDY expenses
    - Minimized large gatherings and team exposure (COVID precautions)
  - Demonstrates ability for ad hoc cyber testing & expertise, consistent with an agile software delivery model
    - Complements existing automated cyber scans/tests in CI/CD pipeline
- Relay/Triton, tool for fusing the CSTO and the ATO, achieved OA in less than 1.5 years from inception, ATO 69 days after software development





- 5 applications accredited on average ~65 days
- KM Platform accredited and available on S/REL in 7 months
- 3 applications available on S/REL, 2 available on S/NF, 1 on JWICS
- 6 applications operationally accepted in ~1.5 years
- Average deployment frequency ~11 days
- 1000+ operational users, 50+ coalition users
  - CSpOC, 18 SPCS, Coalition SpOCs, STRATCOM, NSDC, MDA, FEMA, COCOMs, AOCs, tactical units, mission partners
- Spaceboard utilized at UKSpOC & CANSpOC
- Continuous, daily user engagements (multiple interviews/week/team)
- Bi-weekly site visits to VAFB pre-COVID-19

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#### **Space Board**











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