

Headquarters U.S. Space Force

Chief Technology and Innovation Office



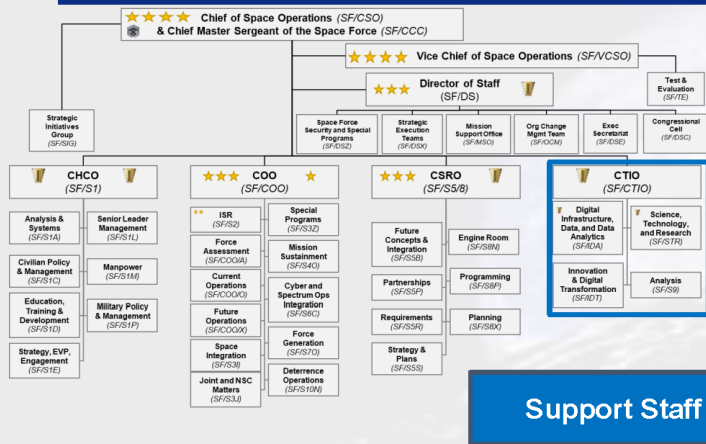
DAFITC

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CTIO Staff Organization and Mission



Chief Technology and Innovation Office (CTIO)

Support Staff



Directorate of Science, Technology, and Research (STR)

Directorate of Innovation and Digital Transformation (IDT)



Directorate of IT Infrastructure, Data, and Data Analytics (IDA)

Directorate of Analysis (S9)



CTIO Mission: Gain *asymmetric advantage* for Space Force by leveraging innovation and technology to move faster – not only catching up, but leap frogging the pacing threat in key areas



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Example Program: SpaceVerse



Problem

Guardians today use antiquated tools, techniques, and technologies limiting USSF ability to support full-spectrum, multi-domain operations.



Proposed Solution

Provide Guardians advanced user interfaces (U/X) with advanced analytics built in to replace digitized versions of analog processes, enhancing understanding & reaction times for decision advantage.



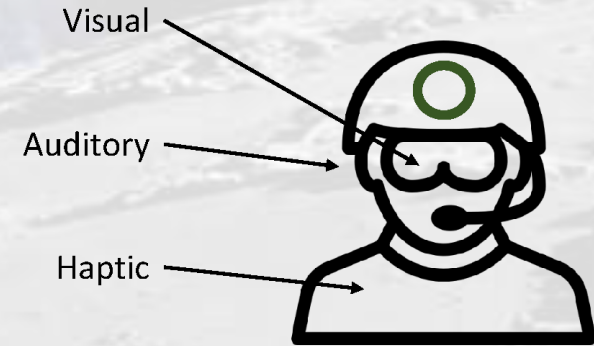
Preparing for Today and Tomorrow's Fight



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How U/Xs Help Close the Kill Chain

- Humans are 22 times more likely to remember a fact when presented in a narrative.
- Gaming technology is the basis of digital twin environments.
- 86% of Airmen and Guardians under age 34 are gamers.
- Gaming is linked to attentional control – what to focus on/ignore.
- Gamers immersed in fast paced games are 25x faster identifying images they have seen.



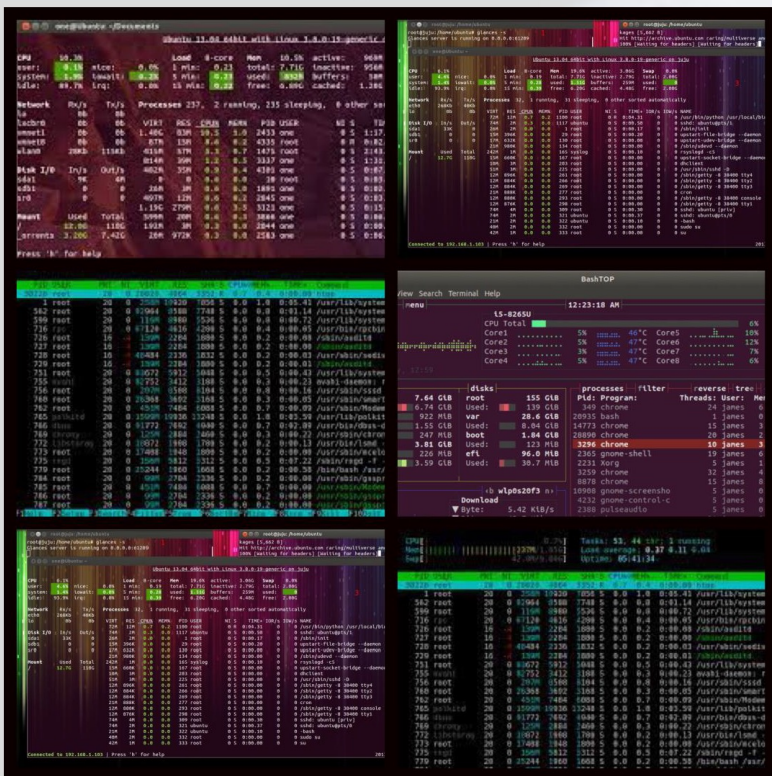
Increasing human performance while
reducing cognitive load

Leverage our Workforce's Skills to Close the Kill Chain Faster and Better



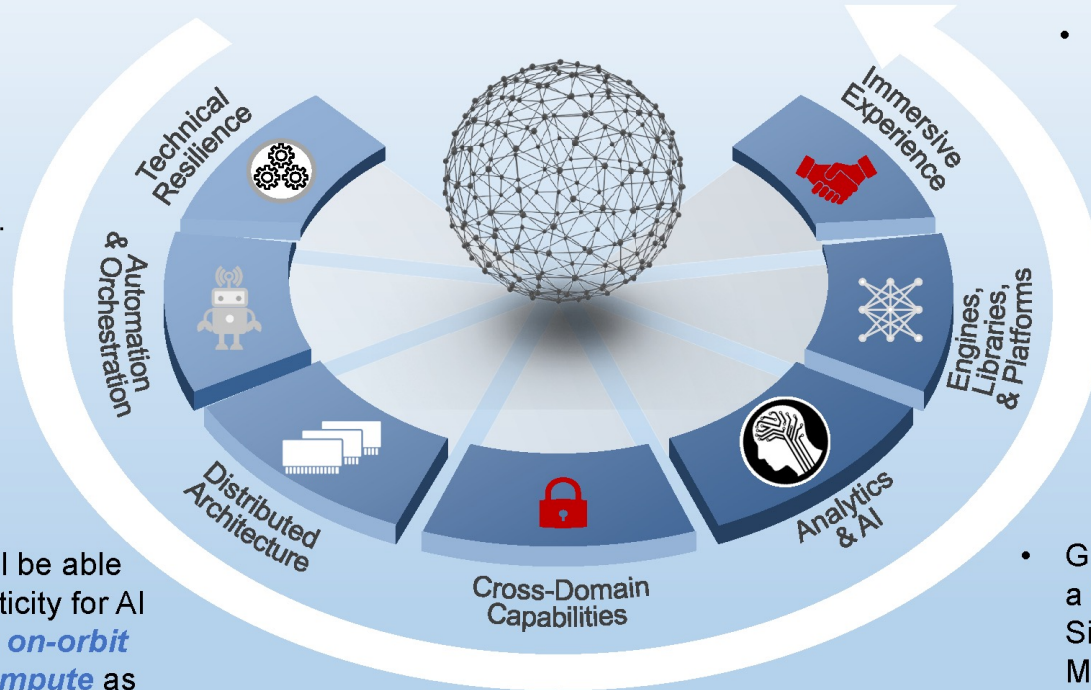
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Overmatching Traditional Methods



Integrated Ops Environment Design Principles

- Guardians will have access to a full set of mission tools due to **software defined networking and behavioral monitors**.
- Guardians will always have the computing resources they need through **self-service** and **infrastructure scaling**.



- Guardians will be able leverage elasticity for AI by leveraging **on-orbit store and compute** as well as **pooling of geo-distributed cloud**.

- Guardians will be able to access data and systems at **all classification levels from minimal devices**.

- All Guardians, regardless of competency, will be able to use **immersive capabilities** for reducing cognitive load and greater understanding.
- Every Guardian will **transition from user to co-creator** through training as Supra Coders, data scientists, U/X developers, RPA.
- Guardians will access a full-suite of Modeling, Simulation, Data Management, and Business Intell tools to be a **data driven Service**.



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Select USSF IT Needs

- High speed, low latency software-defined networking-as-a-service
 - On orbit storage and compute
 - Every device a “ground station”
 - Permeability and Agility across Domains
 - Allow automated discovery of data across network classifications without movement
 - Provide accredited high speed, large file size transfer cross domain solutions preferability via cloud providers
 - Reduce the need to move unclassified data “up”
 - Commercial Solutions for Classified (CSfC) mobility for every Guardian
 - BYOD
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