

GenAI at Sea for Naval Surface Forces

Enterprise AI Summit

U.S. Naval Surface Forces Task Force Hopper

Commander Collin Fox

Chief Strategy Officer

09 April 2026

This Slide: **UNCLASSIFIED**

Overall Brief: **UNCLASSIFIED – DISTRO A**
UNCLASSIFIED



UNCLASSIFIED

Who We Are: The Navy in Context

- **Workforce:** ~345K active-duty sailors, ~222K civilians
- **Recruiting:** ~40,600 new accessions per year
- **Budget:** \$292.2B annual budget request (FY26) — comparable to Apple's annual revenue.
- **Fleet:** 287 deployable ships including 11 aircraft carriers, 63 submarines, 115 surface combatants
- **Global Footprint:** Continuous operations across every ocean, dozens of countries, 24/7/365
- **IT Scale:** Secure/classified networks worldwide, shipboard systems in disconnected environments, one of the most demanding cybersecurity postures of any organization

UNCLASSIFIED





UNCLASSIFIED

Who I Am: Commander Collin Fox

I am a generalist

- **Operations Background:** H-60 Helicopter pilot - anti-submarine warfare, search and rescue, developmental test & evaluation support. *End user of complex technical systems in high-stakes environments.*
- **Strategy & Planning:** Foreign area officer focused on operational planning, multinational coordination, and foreign policy - arms control treaties, deliberate contingency planning, rapid crisis response. *Experience in large bureaucracies pursuing complex change.*
- **Education:** BS in History from USNA; two master's degrees — one in systems analysis (Naval Postgraduate School), one in naval/maritime science (Chilean Naval War College).
- **Author & Editor:** Senior editor with Center for International Maritime Security (CIMSEC); wrote ~20 articles on naval/military topics.
- **Current Role:** Chief Strategy Officer for Task Force Hopper under Naval Surface Forces — the Navy's initiative focused on integrating AI, autonomy, and emerging technology into surface warfare.

UNCLASSIFIED





UNCLASSIFIED

Where We Started & Why...

A Few Big Ideas:

- 1) The world remains a dangerous place.
- 2) Rapid technological adoption *can* create significant advantage in conflict.
- 3) Software *can* be updated for effect faster than hardware.
- 4) Small, focused teams given wide latitude *can* accelerate game-changing efforts within large organizations.

Our Why: Task Force Hopper exists to rapidly increase digitally-enabled warfighting effectiveness for our ships in or preparing for prompt and sustained combat operations at sea.

Our How: Connect everyone, coordinate widely, run pilots, and scale them.

UNCLASSIFIED





UNCLASSIFIED

...where we are now





UNCLASSIFIED

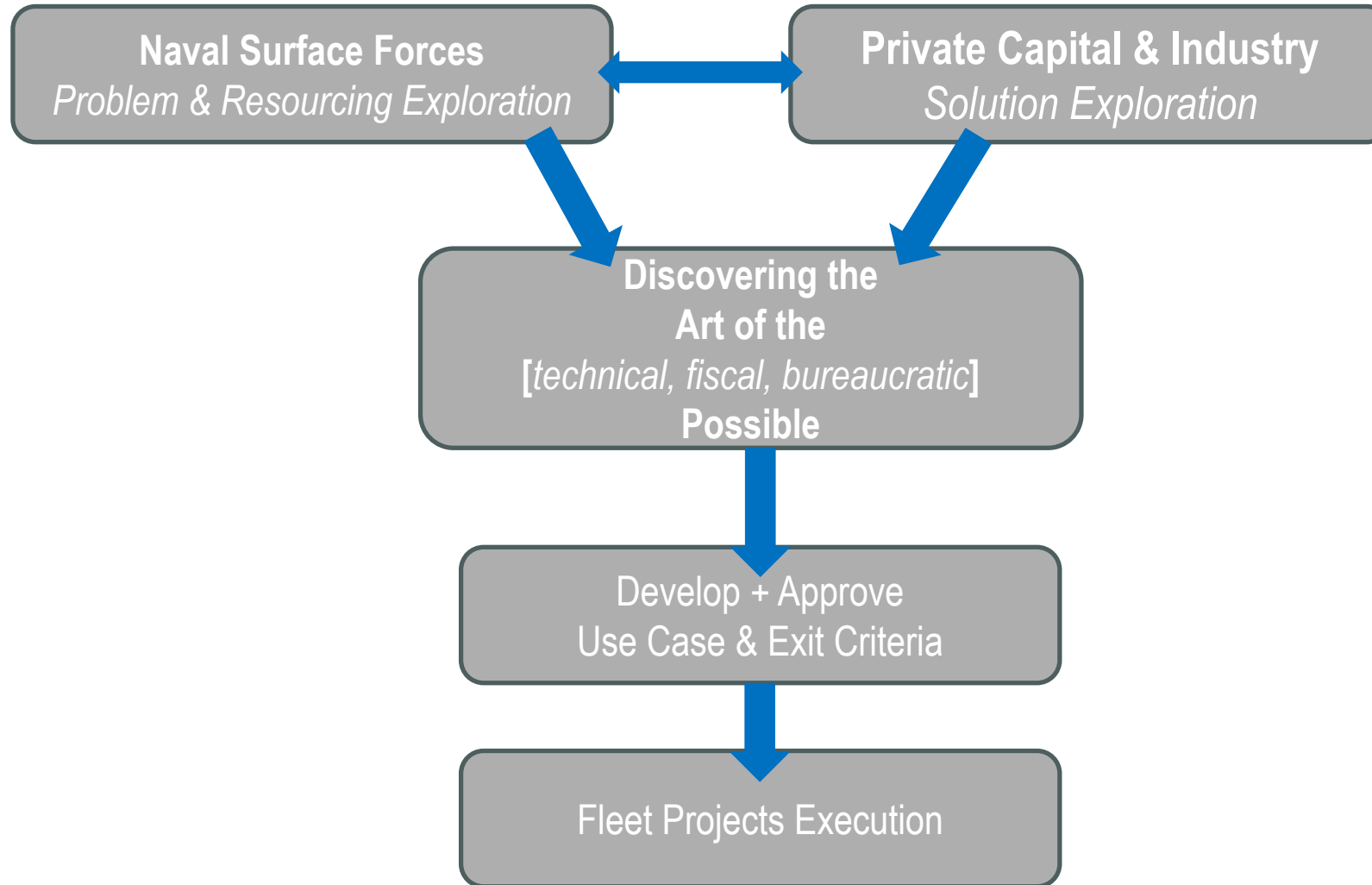
Thanks to our VC Backer





UNCLASSIFIED

Pilot Program Development



UNCLASSIFIED





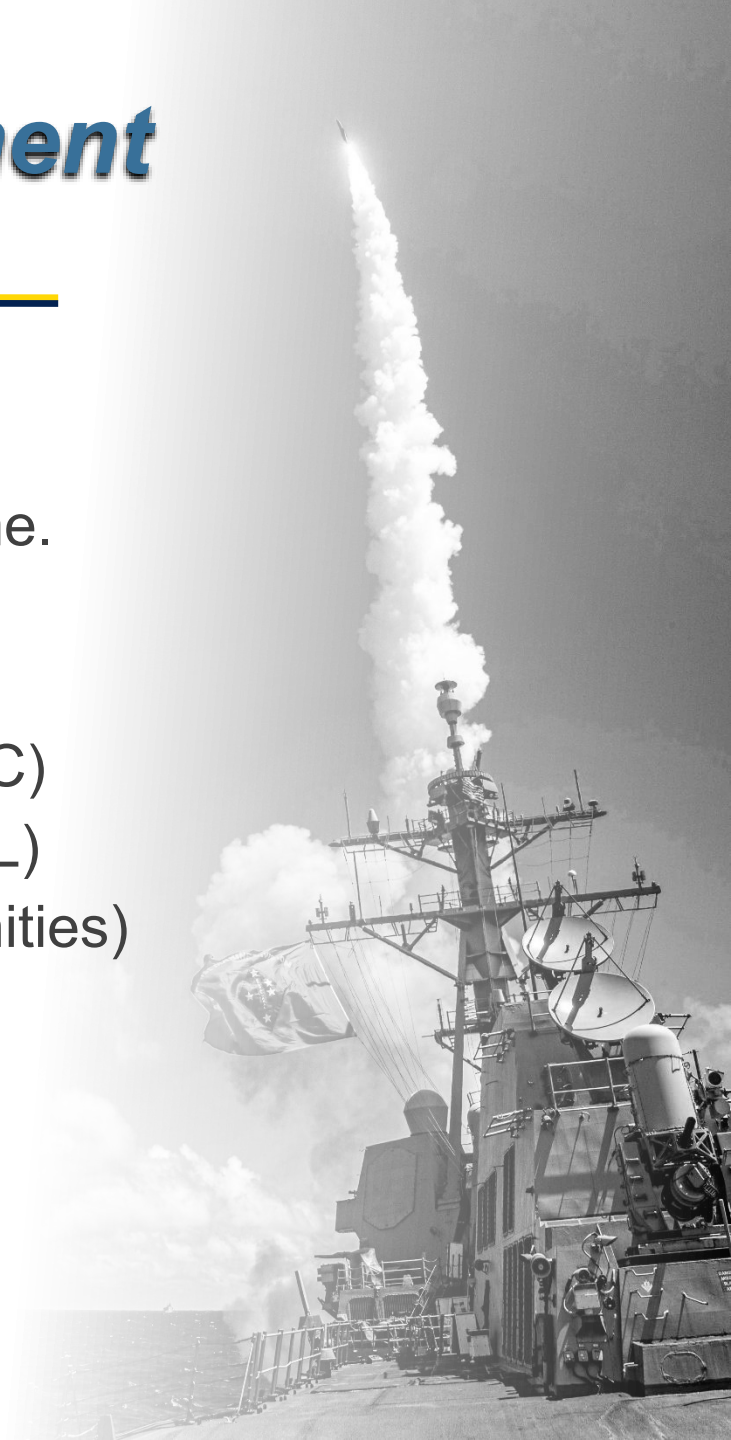
UNCLASSIFIED

Our Tech Deployment Environment

Persistent Challenges:

- **Reliability:** Combat systems must work the first time, every time.
- **Regulation:** Stringent Authority to Operate (ATO)
- **Environmental:** At sea – shock, movement, salt air, etc.
- **System Constraints:** Space, Weight, Power, Cooling (SWaP-C)
- **Comms:** Denied, Degraded, Intermittent, Low-Bandwidth (DDIL)
- **Institutional:** Problem scoping on validated gaps (vs. opportunities)
- Procedural compliance vs. operational innovation.

UNCLASSIFIED





UNCLASSIFIED

From Theory to Practice (x3!)

1 – AI Sidekick:

GenAI maintenance decision support for SPY radar

2 – DECK:

An oceanic Google Streetview

3 – FleetWorks:

Bottom-up Navy software development



UNCLASSIFIED



UNCLASSIFIED

Air Defense Radars are Like Seatbelts



UNCLASSIFIED



UNCLASSIFIED

The Legacy of the SPY-1 Radar

The Shield of the Fleet for 40+ Years

- Developed in the 1970s to counter Soviet threat of saturation anti-ship cruise missile attacks.
- The world's first naval passive electronically scanned array (PESA) radar.
- Heart of the AEGIS weapons system, the foundation of modern naval air defense.
- First deployed in the 1980s on *Ticonderoga-class* cruisers, continually upgraded ever since for new threats and capabilities...with attending challenges.

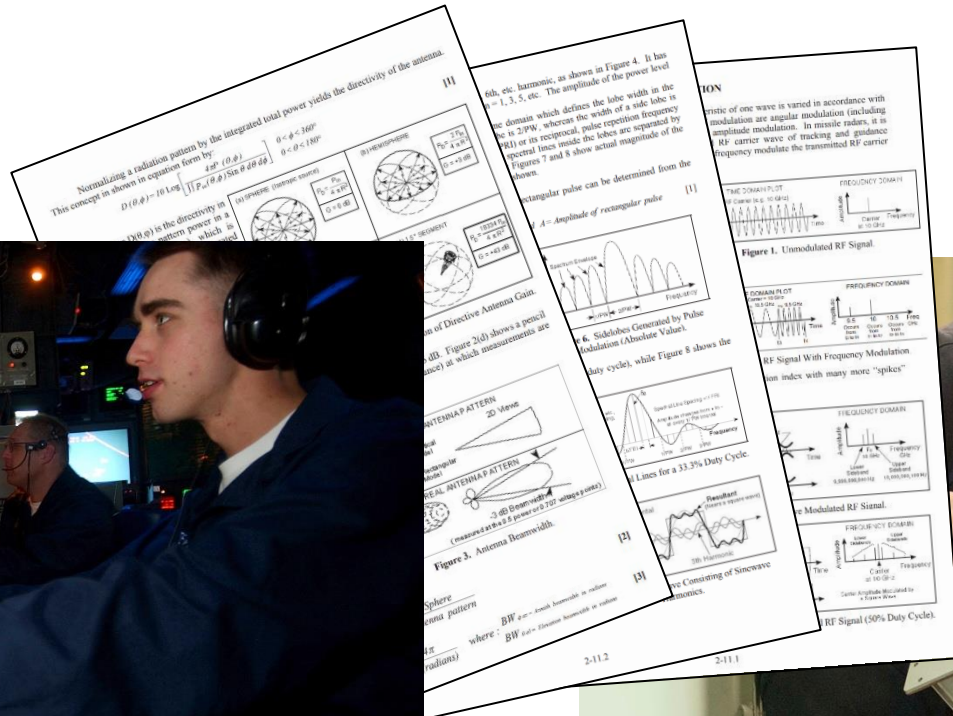


UNCLASSIFIED



The Maintenance Challenge: The Human Factor

- Initial technical training pipeline: 9+ months
- Years to develop mastery for maintenance and operation
- Reliance on contracted technical reps for troubleshooting





UNCLASSIFIED

The Pilot: AI Sidekick

- TF Hopper partnered with Program Executive Office Integrated Weapons Systems (PEO IWS) and Frontier Technology Inc. starting in 2024.
- The pilot fields air-gapped mobile workstations running a tuned instance of Mistral 7B loaded via Retrieval Augmented Generation (RAG) with thousands of pages of SPY technical publications and maintenance procedures, representing decades of development.
- Sailors can query the entire body of knowledge for the system through a generative AI chat format – with citations, diagrams, procedures, etc., produced in the window from the authoritative publications.
- Will deploy on USS *Chafee* (DDG-90) and two other AEGIS destroyers.



UNCLASSIFIED



UNCLASSIFIED

DECK: Data Edge Collection Kit

- Away the SNOOPIE Team, Away!



UNCLASSIFIED





DANGER
JET
INTAKE

CVW-3
EISENHOWER

RESCUE
LT.A.M. ZACCARIA

WARNING

WARNING



2015
Austin

2017
Phoenix East Valley

2022
San Francisco





UNCLASSIFIED

DECK: Data Edge Collection Kit



The NOMARS program's demonstration vessel, USX-1 *Defiant*, completed construction in February 2025.



UNCLASSIFIED



UNCLASSIFIED

DECK: Data Edge Collection Kit

- Developed by Applied Intuition for Program Acquisition Office (PAE) Remote Autonomous Systems (RAS), currently deployed on 10 ships
- Builds on Applied Intuition's experience with machine vision automotive self-driving vehicles
- **Functionality:** DECK continuously collects operational sensor and mission data, primarily from manned vessels.
- Important to characterize the maritime environment for autonomous vessels and other purposes.
- **Edge Computing:** DECK runs AI at the edge, allowing for rapid analysis and reduced reliance on centralized, off-ship cloud processing under a Degraded, Denied, Intermittent, Low-bandwidth (DDIL) environment.
- **Continuous Improvement:** The system delivers ongoing software updates to improve system accuracy and reduce the workload for operators.



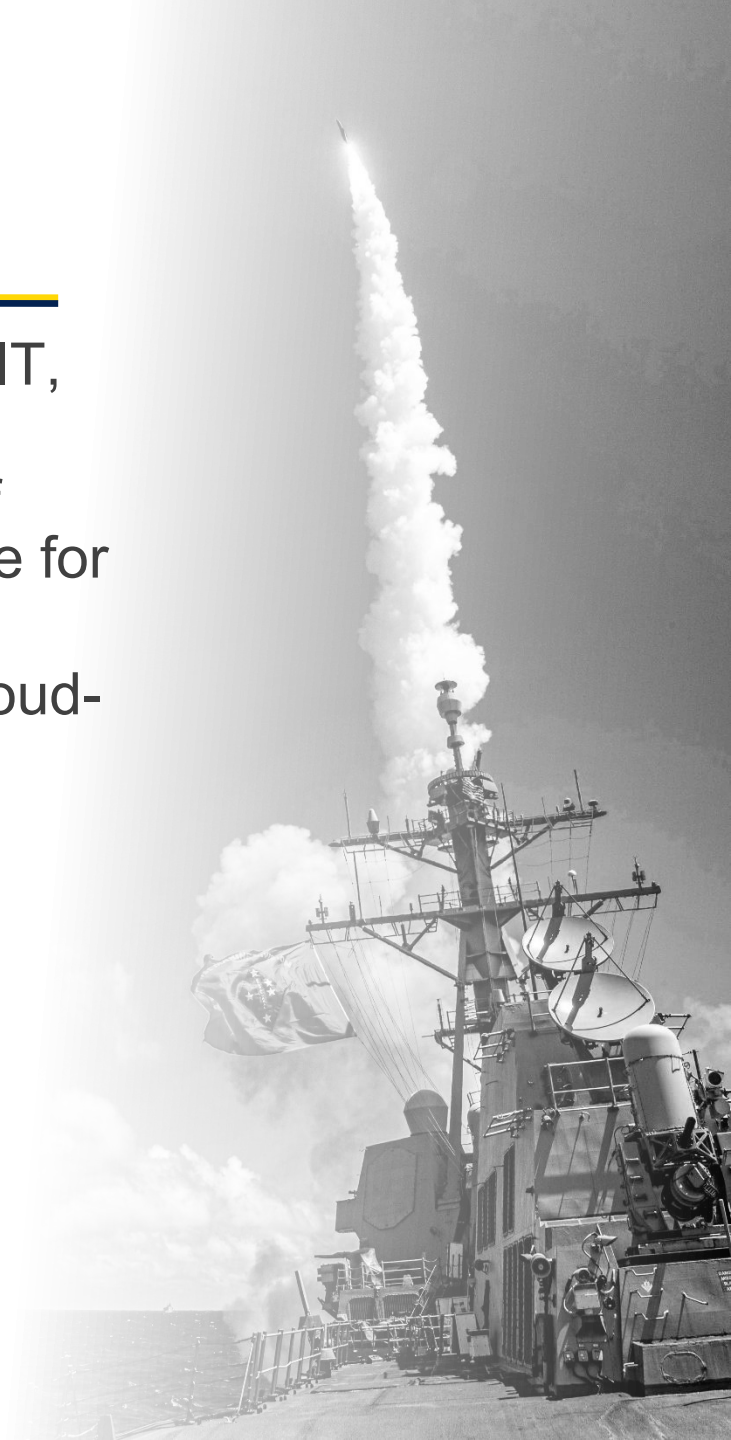
UNCLASSIFIED



UNCLASSIFIED

Other Systems - Discussion

- Ask CHIEF: Standalone AI RAG tool for shipboard networks & IT, developed by PMW 160 with Deloitte
- SAILOR AI Afloat: Porting of existing shore-hosted database of publications across all Navy specializations to on-prem instance for RAG queries
- FlankSpeed Edge: Planned local replication layer of existing cloud-based Enterprise Service
- Enterprise-level solutions later vs. tailored efforts now?
 - Yes to all of the above.



UNCLASSIFIED



UNCLASSIFIED

FleetWorks – Digital Workforce Development

- Accelerating delivery of software-enabled capabilities
- Enabling continuous AI and software solutions and innovation.
- Develops FleetWorks Sailors with unique digital skillsets
- Delivering software that is both developed and delivered by Sailors for Sailors
- 10 billets, a mix of officers, enlisted, and civilian support, at Commander, Naval Surface Forces Atlantic, as initial pilot
- Builds on existing efforts from Marine Corps Software Factory

UNCLASSIFIED



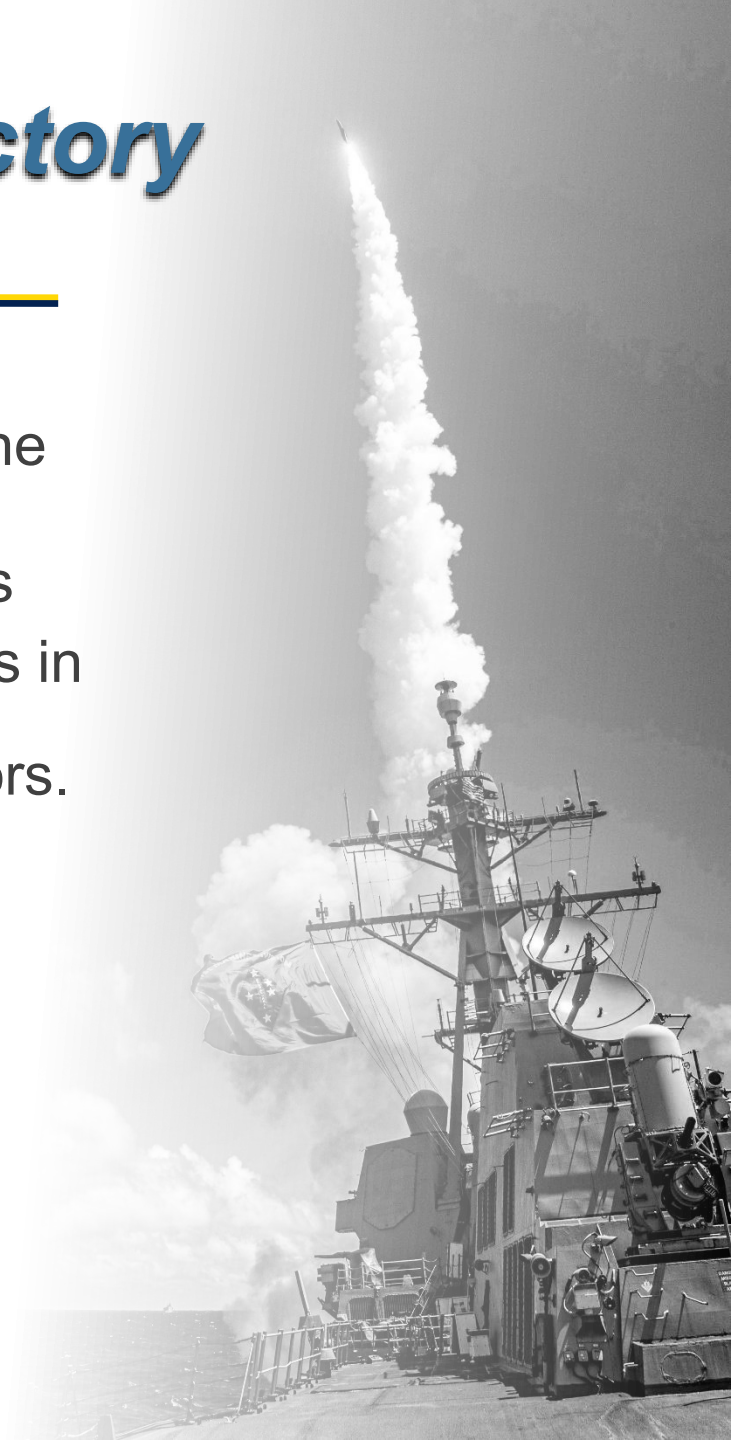


UNCLASSIFIED

FleetWorks – Navy Software Factory

- **Recruit:** From degree programs and hackathons.
- **Upskill:** Sailors will attend a 4-month accelerator course with the Marine Corps Software Factory alongside in Austin, Texas
- **Prioritize:** TF Hopper reviews Fleet demand and directs sprints
- **Deploy & Employ:** A Navy Software Factory will embed Sailors in the development process alongside industry and accessing warfare centers, program acquisition executives, and fleet sailors.

UNCLASSIFIED





UNCLASSIFIED

“Here's the help I'm looking for”

- Talk to us!
 - TFHopper@us.navy.mil
 - collin.r.fox.mil@us.navy.mil
- Pitch to us!
 - <https://forms.osi.apps.mil/r/0fKkj4cR8N>
- For those around Austin: Engage with FleetWorks and the Marine Corps Software Factory



UNCLASSIFIED

