CDAO

Chief Digital & Artificial Intelligence Office

JATIC Program Increment 4 Planning

Program-level Objectives

Introduction & agenda

- State of the program
  - (where we are)
- Postcard from the future
  - (objectives & an imagined future state)

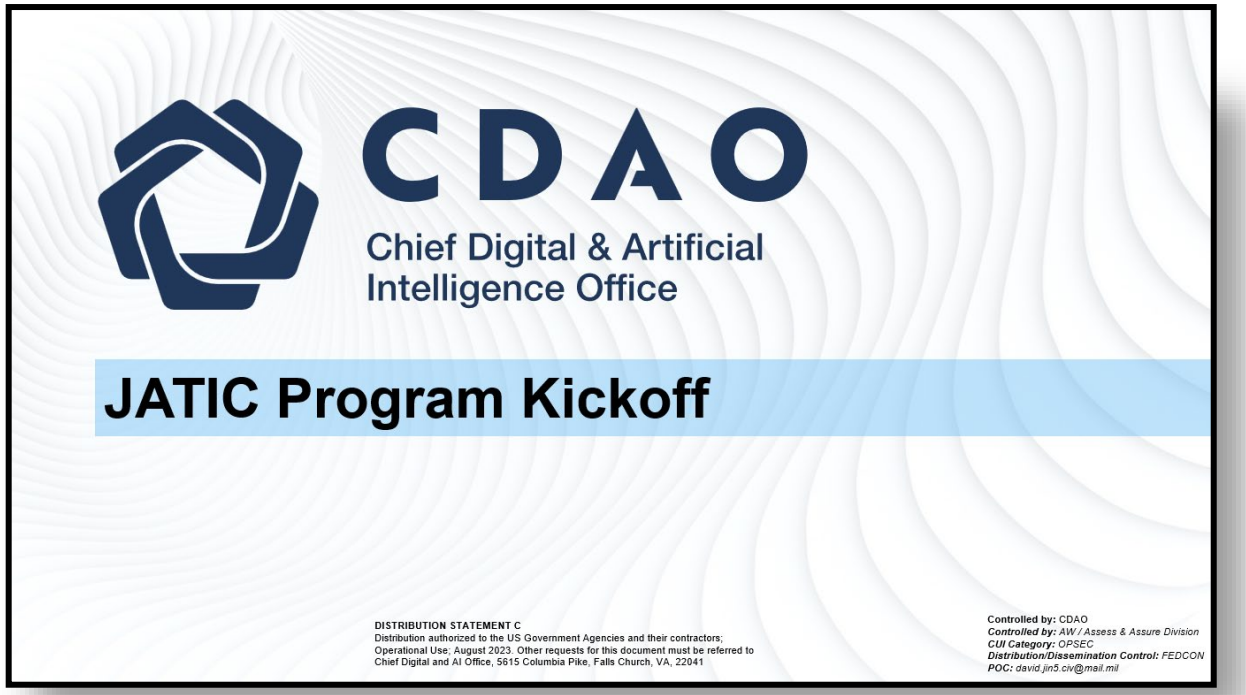
State of program

Where we are

CDAO

First, a quick look back…

- Held our **program kickoff** on 07 AUG 23



Bridging the gap (August 2023)

Research & Engineering

Research into advanced applications of AI for DoD-unique modalities:

- T&E of operator-AI performance
- T&E of AI in systems of systems
- Realistic adversarial attacks
- Use of simulation for DoD modalities, e.g., sonar, radar
- AI monitoring at the edge

CDAO JATIC

- Transition existing AI T&E work into DoD by increasing maturity and usability
- Increase speed and rigor of AI T&E by providing common tools, standards, infrastructure
- Inform future DoD research investments

DoD Service PEOs, PMOs

- Testing and fielding AI-enabled capabilities across:
  - Logistics
  - Intelligence
  - Operations
  - Health
  - …
- Huge interest and demand to employ AI
- Lack of knowledge, expertise, or centralized investment
- Uncertainty on novel risks and impacts on existing systems

CDAO

Back to the present… (August 2023)

CDAO as an organization...

- Recently had its first birthday – June 1st, 2023
- Is currently amid its 3rd or 4th large re-org

JATIC as a program…

- Got its first funding in November 2022
- Committed all its FY23 funds in July 2023
- Finished its first sprint with the whole program team last week
- First time meeting in-person today

Huge amount of potential but … there's a lot of work to do ☺

CDAO

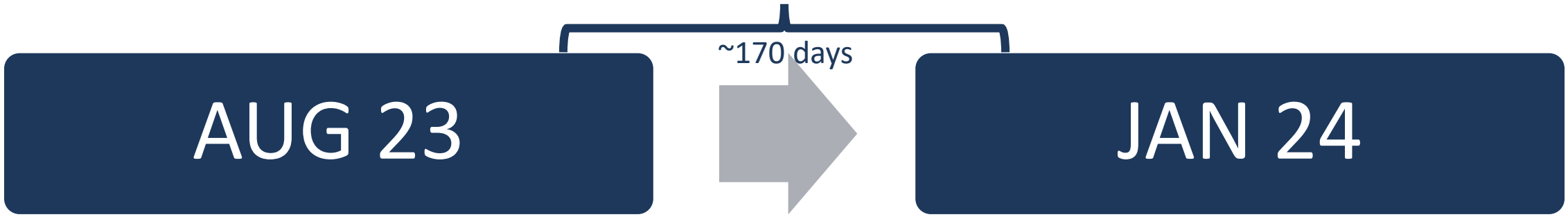
Back to the (actual) present…

- It has been 171 days since 07 AUG 23.
  - For reference, half a year is 182.5 days

$\Rightarrow$ 2 increments completed, 2 increments remaining

- Key question(s):
  - Where are we with our products?
  - Are we any further?
  - What is now the **main constraint** to product adoption?

Context around adoption and its evolution



- **No users**
- No user demand for JATIC
- Many products not easily available
- Lower product maturity
- Products not interoperable

- Quite a lot of user demand for JATIC
- Available, interoperable products – brought together in coherent story
- Improved documentation
- Greater maturity – many products at an “MVP” state
- etc.

But… **still no users**

So… where's the adoption problem?

- First – 170 days is not that long
- Second – I'm not sure that there is an adoption problem

Here's some feedback from the Tuesday demo (from some folks who have been to a few demos)

"From the demo today, it seemed like the tools have matured enough to be used to evaluate some of our ML products. I'm meeting with ----- folks to design requirements for transitioning ------, and I am going under the assumption we'd use some of the tools shown today to help with the evaluation"

"I found the demo very helpful in understanding where you are at; and it looks like many things have advanced significantly to where we think we can integrate many of your tools"

- **Key Demo Takeaway:** Strong perception that JATIC products are more much mature and can deliver unique value

- So, I don’t think we are in a bad spot because we currently do not have any users
- Nor do I think it has been unwise to focus almost all attention on product development

But… deployment and adoption will shift to be a major focus (and program objectives) for these next increments

Because:

1. getting users is the way that our products have impact
2. More interestingly, with our current product maturity:
   - increased willingness of users to adopt products after demonstrated value
   - reduced marginal utility of focusing internally on development
   - increased importance of understanding user requirements
     - specific mission details
     - security, deployment
     - optimal messaging, training, education, etc.
     - UI/UX design
     - …

ARiA: “We would like next development cycle to be user-driven”

Deployment and adoption strategy

- Despite DoD user interest and demand, deployment and adoption is still very difficult
  - “if you build it, they will come” **does not work in the DoD**

So, what is the strategy?

1. Deployments / adoption will be key increment objectives
2. CDAO will set up agreements with key DoD programs for
   1. them to use our products and provide feedback
   2. us to assist in integration with their platfom, environment, and mission
3. We will be joined by a team *specifically* to help with deployment into DoD programs

A new team appears!

- We will be joined by a team from
  - Naval Information Warfare Center Pacific (NIWC PAC)
  - & Naval Information Warfare Center Atlantic (NIWC LANT)
- AI engineers and experts who directly support Navy program offices from technical and engineering perspective

- They will be:
  - Providing feedback on all JATIC products (as end users)
  - Lead efforts to integrate products into key Navy programs

Summary of current state

- Products are in a state where we have shown unique functionality
  - There is a good and growing amount of interest, including major DoD AI programs
- We are in a spot where user adoption, feedback, and engagement is **very important** to continue productive development
- Deployments will be important increment objectives
- NIWC and the program will help with deployments as well

A postcard from the future

A north star to provide aspirations and direction

AUG 2024

CDAO

Mission & use case

Interesting Engineering

Ex-Google CEO Eric Schmidt leads new secret US drone project to battle China

According to Forbes, Eric Schmidt is reportedly heading up a new secretive initiative to help the U.S. compete with China's impressive drone...

2 weeks ago

Forbes

Ex-Google CEO Eric Schmidt Is Working On A Secret Military Drone Project

One of the defense industry's loudest advocates in Silicon Valley, the billionaire has been planning a covert venture inspired by Ukraine's...

2 weeks ago

WSJ WSJ

Opinion | The Future of War Has Come in Ukraine: Drone Swarms

The innovations that have led to Kyiv's remarkable successes against Russia will change combat dramatically.

Jul 7, 2023

The Washington Post

The war in Ukraine is spurring a revolution in drone warfare using AI

Drones empowered with artificial intelligence hold huge promise for Ukraine's military but could also benefit nefarious non-state actors...

Jul 26, 2023

COMMENTARY

The Replicator initiative is key to the Army's modernization

Ryan McCormack
December 20, 2023

Ukraine's 24/7 battlefield drone operation: 'Whoever wins the tech race, will win the war': Reporter's Notebook

The Punisher has a range of 25 miles and can carry 5.5 pounds of explosives.

By Tom Soufi Burridge, Oleksiy Pshemyskiy, Bruno Roeber, and Yuriy Boyko
September 29, 2023, 9:18 AM

CDAO

To all of these UAV programs, JATIC products were…

- Easy to find and understand
  - Tutorials and workshops at conferences
  - Polished internet presence
  - Clear outline of how JATIC can fit within an AI T&E pipeline
- Easy to deploy
  - All necessary products can be installed **with a single command, in a single environment**
- Easy to use
  - Had a platform, with built-in workflows for object detection model T&E, that can easily be adapted for real application
  - Had *well-maintained* demos, specifically for UAV T&E
  - Had a polished public presence and documentation
- Validated
  - Product functionality, *including perturbations and attacks*, are validated for the mission in order to support high-consequence T&E activities.
- Mature, stable, and secure
  - Easily used within an enterprise platform

Aside from the present:
The reason these things are so important is because

1. AI T&E is not very well understood and
2. AI T&E is the 37th most important thing from the perspective of an autonomy PM

AI T&E is complex, and JATIC is a complex set of products.

In this future state, we take a multi-faceted approach to help users manage that initial complexity

https://jatic.pages.jatic.net/internal-docs/program/design-principles/

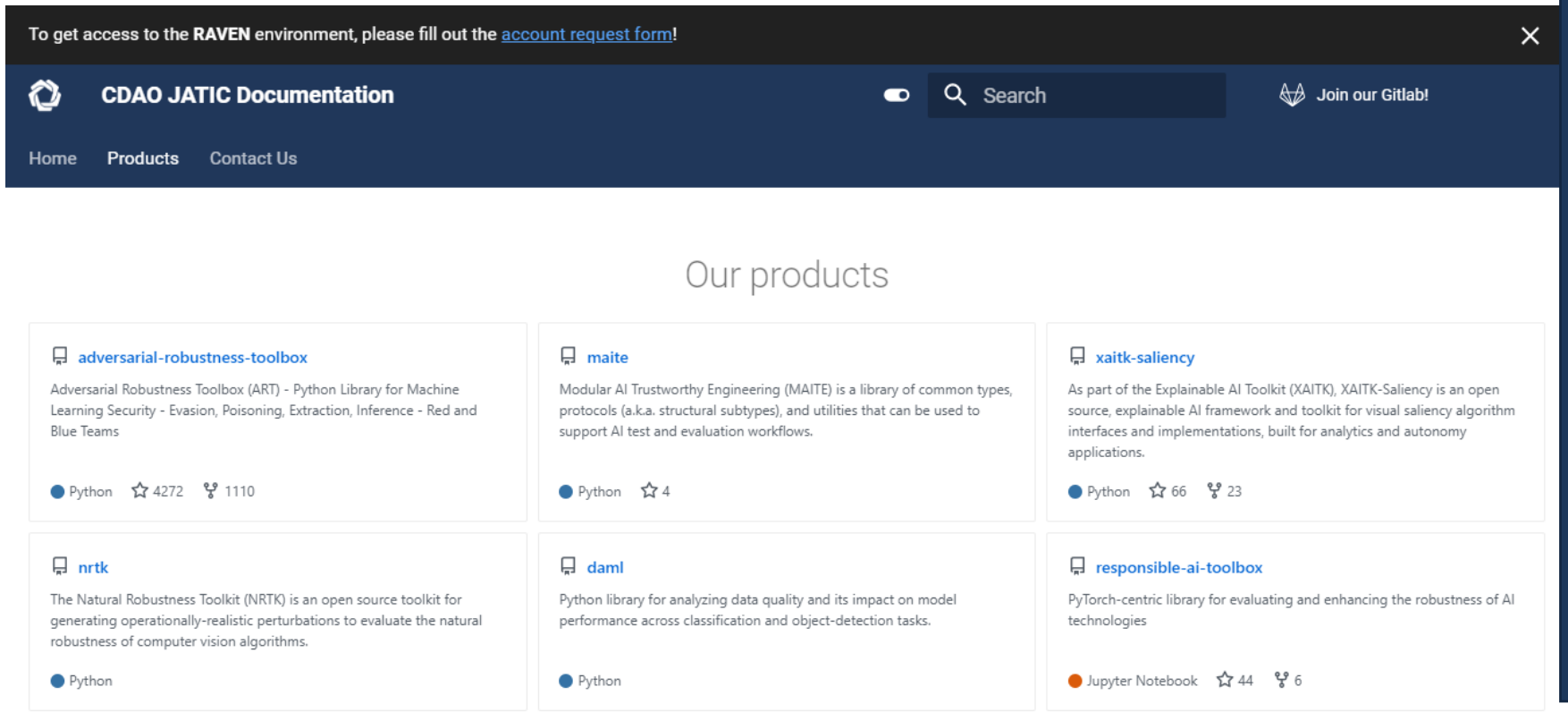
Which led to…

- Deployment and integration of JATIC products in key DoD programs
  - Replicator T&E pipeline – "First and most importantly, we are looking for CV / ATR model T&E tools“
  - NGA MAVEN
  - Linchpin
  - Harbinger

- Deployment and integration of JATIC products to support international partners
  - UKR
  - AUKUS

In parallel with mission support…

- Adoption in open-source

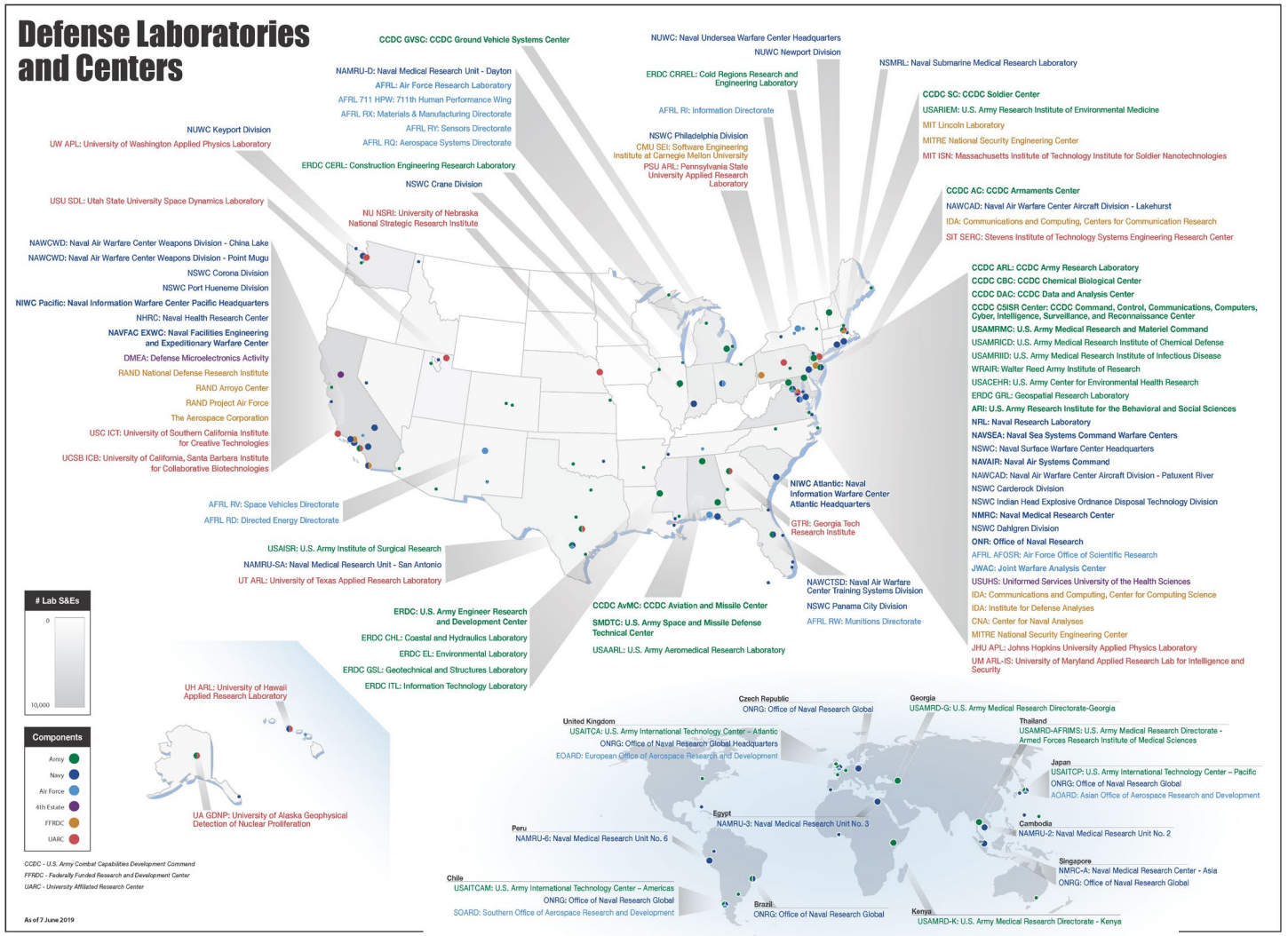


- Achieved a small but growing amount of adoption in the open-source community
- Established a consistent feedback loop with key users from open-source
- Public presence has established product legitimacy and further increases gov’t adoption

https://cdao.pages.jatic.net/public/products/

In parallel with mission support… (cont)

- Adoption in gov’t research labs



- Platform deployments in two DoD AI research labs, such as federally funded R&D centers or service labs
- Established consistent and feedback loop with users within those labs
- Presence at labs continually increases exposure of products to gov orgs

And slowing gaining independent adoption…

MAITE protocols

- Have engaged with several key USG stakeholders and received feedback
- Some buy-in achieved with protocols
- Small level of growing adoption within DoD programs
- Small level of growing adoption within open-source community, including native MAITE protocol support for some non-JATIC AI T&E tools

Summary of postcard from the future

- Deployments into AI T&E pipelines of key missions
- Enabled by products being:
  - Easy to find and understand
  - Easy to deploy
  - Easy to use
  - Validated
  - Mature, stable, and secure
- Small but growing adoption in open-source community
- Initial deployments in DoD research labs
- Initial buy-in and some adoption of protocols

Conclusion

- Currently two increments in
- Deployments will be a big focus of next two increments

- Many things will get interesting…
- but will also become more complex:
  - There'll be some blockers when we start deployments
  - More cross-program goals that require multiple product integrations
  - etc.

CDAO