UNCLASSIFIED

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NO SCRIPT PROVIDED

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For Open Publication
Jun 17, 2024
Department of Defense
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

Declassification Modernization Brief

Addressing the Necessity to Modernize the DoD Classified Information Management Declassification Program

24 JUNE 2024

APPLIED RESEARCH LABORATORY FOR INTELLIGENCE AND SECURITY

Bottom Line Up Front

- A digital tsunami is coming - **The USG is at a pivotal decision point and cannot afford inaction.**
- **A whole-of-government approach is needed** to modernize declassification.
- Reducing backlog and improving efficiency will **improve transparency** and **ensure ongoing protection** of classified information.
- Capabilities, requirements, frameworks, and implementation strategies to acquire **holistic solutions** are being developed.
- **Testing and evaluation** in collaboration **with potential transition partners** is critical.
- The current effort is **built upon the success of the OUSD (I&S) initial investment** in ARLIS and continued investment in declassification modernization

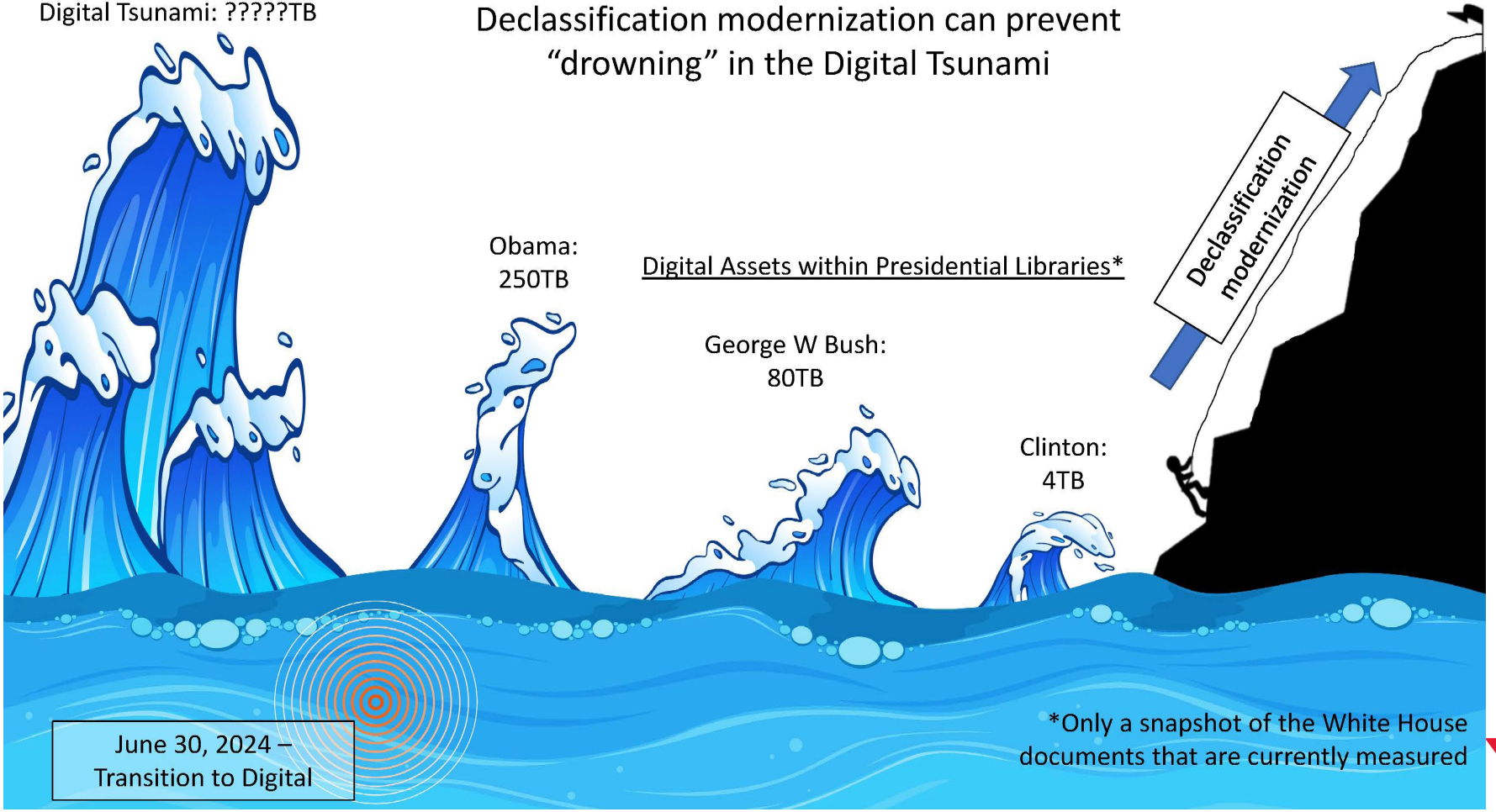
Agenda

- Current state of declassification
- DoD efforts
  - Engagement with declassification partners & components
  - Systems engineering approach to modernization
  - Reviewer augmentation capability testing
- Potential Collaborations
- Next Steps
- Open Discussions

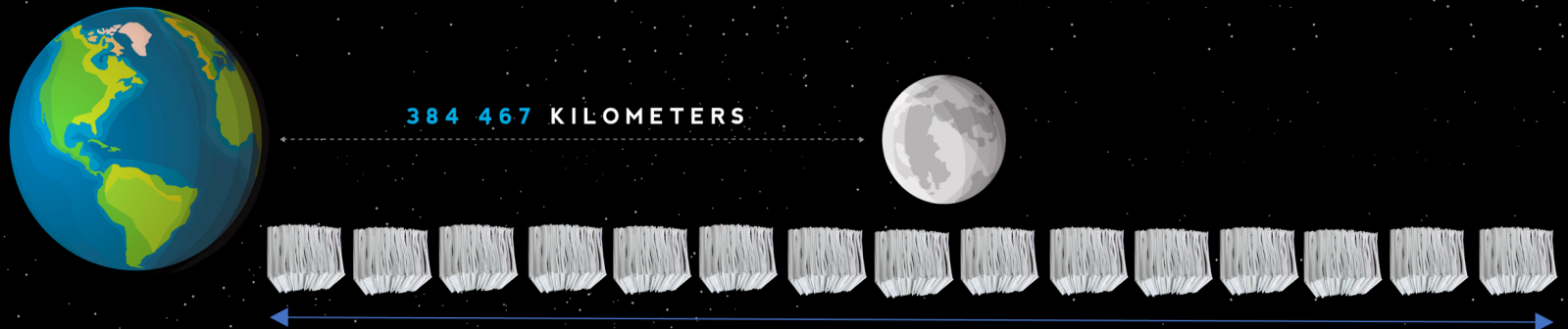
Setting the Scene: Establishing the Need for Modernization of Classified Information Management

- "**Digital tsunami**" and exponential growth of electronic classified information; current architecture not designed to handle this magnitude
- Declassification offices have the **same amount of resources** but a **rapidly expanding volume of work**
- **Frameworks and strategies must be developed now** while maintaining a holistic view of the classification, records management, and declassification program requirements
  - Focus on tool capabilities and metrics that can be of benefit across programs
  - Determine appropriate acquisition program development and life cycle for supporting tools that meet the users' needs
  - Streamline associated policies, procedures, and guidelines

Declassification modernization can prevent "drowning" in the Digital Tsunami



Declassification Modernization is an achievable moonshot, but needs a "whole of government" approach – OUSD (I&S) can lead the way



625 230 KILOMETERS

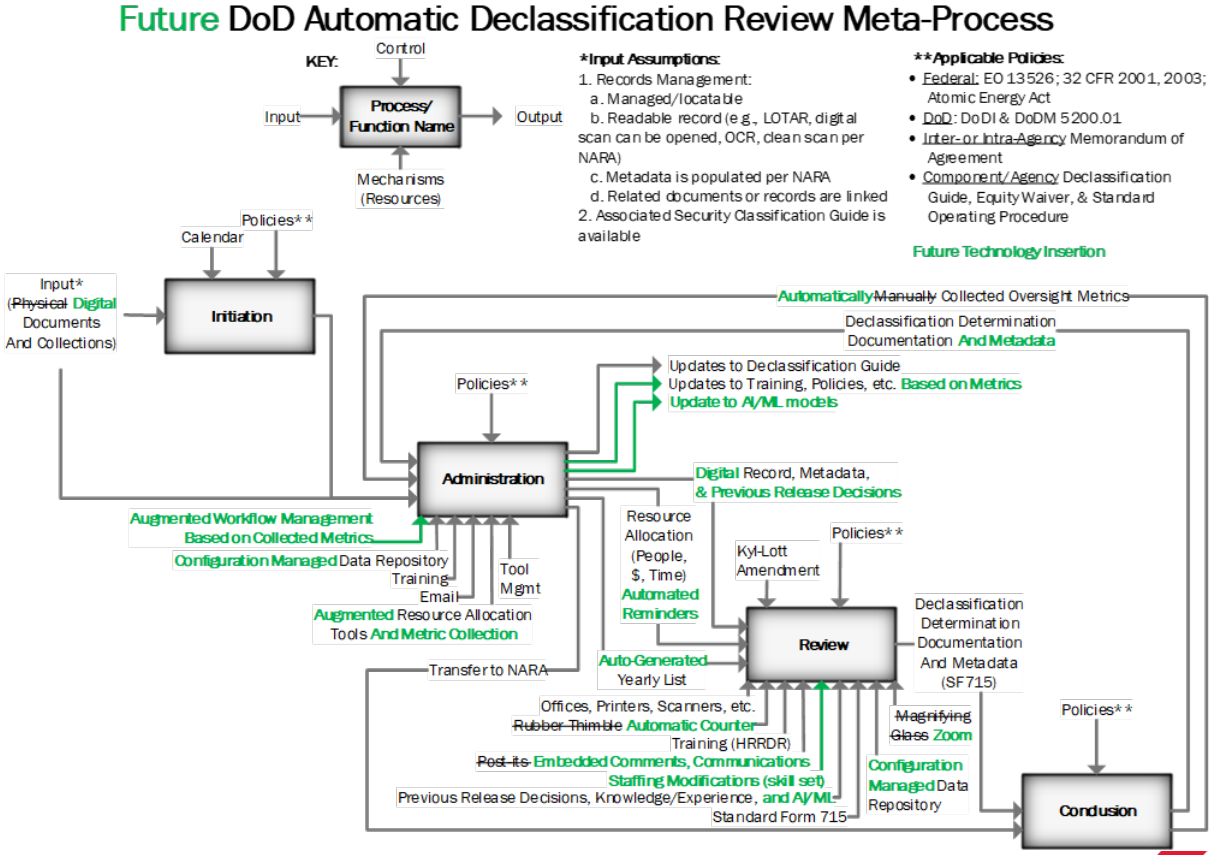
Obama Library Digital Assets: 250TB

Approach and Philosophy: User-Centric

- Declassification is — and must remain — inherently human-centric to protect classified information
  - Technology will never supplant humans, but could augment them
  - Recognized disparity between DoD-wide needs (e.g., oversight, monitoring) and reviewer needs (e.g., task conduct, accuracy, workflow management)
- Capability testing for state-of-the-art tools and technologies that is independent of a specific component or type of review

Systems Engineering Approach: ADR

- Future Characteristics
  - Semi-automated
  - Technology augments the reviewer
  - Digital documents with configuration management and control
- Similar results for MDR



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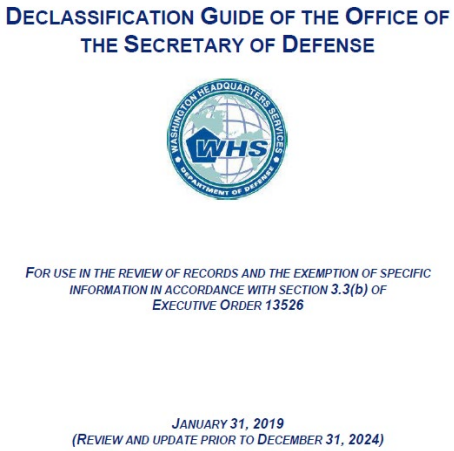
Black Box AI Prediction

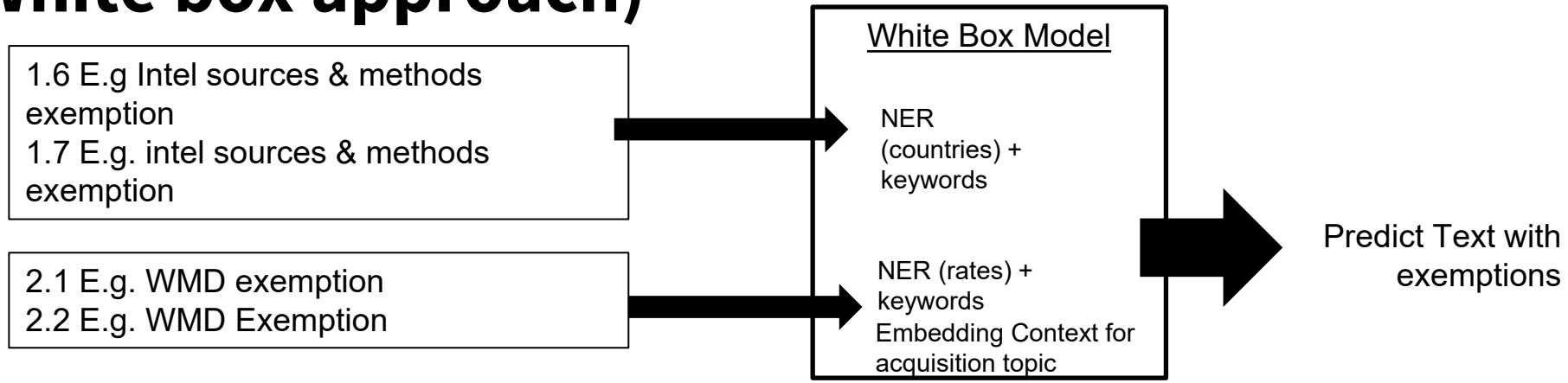


Black Box Model (e.g., LLM)

Predict Text with exemptions

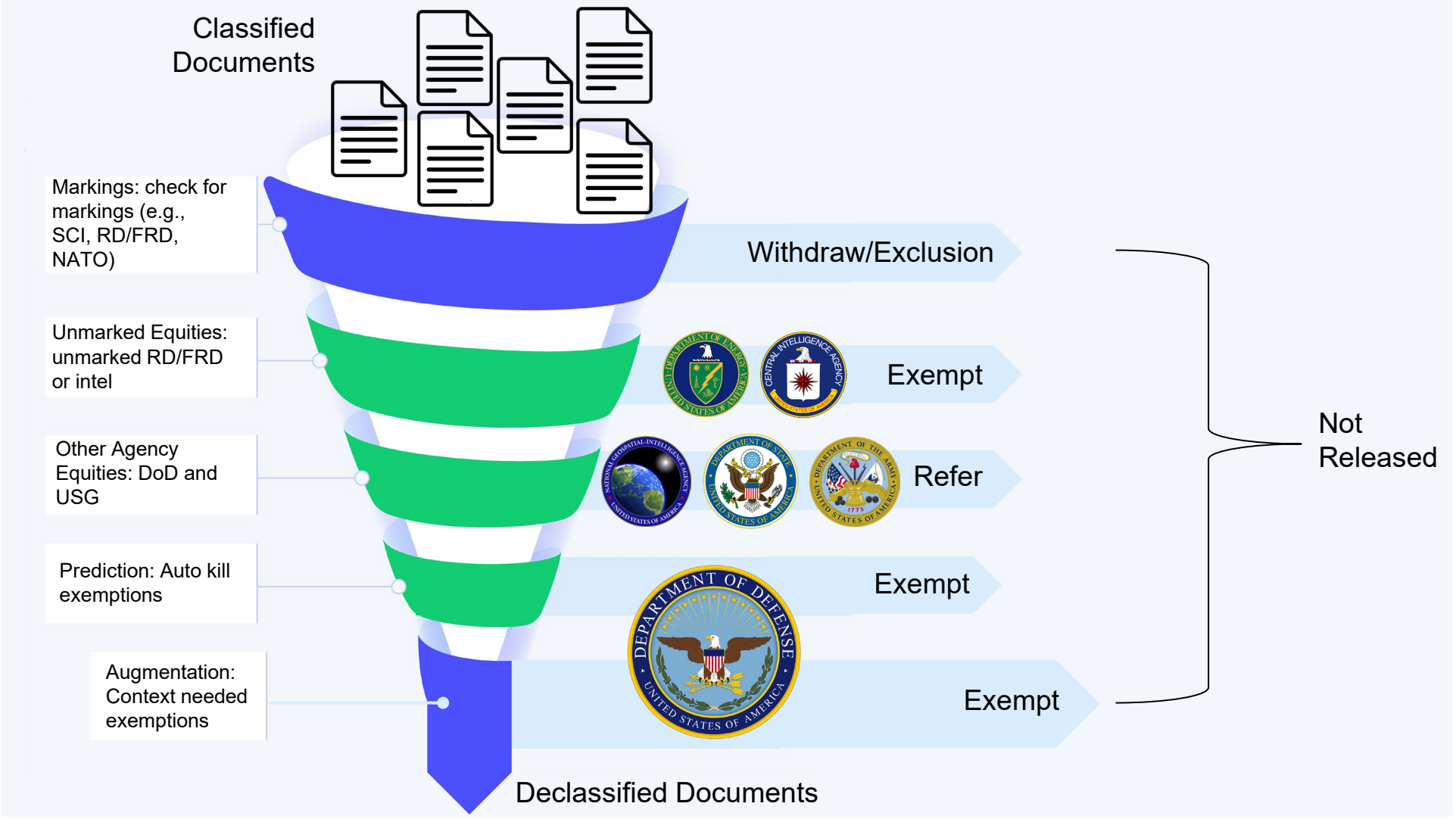
- Lacks transparency & provenance
- If model is incorrect, it would need to be fully replaced
- Modularity is limited
- Lacks explainability

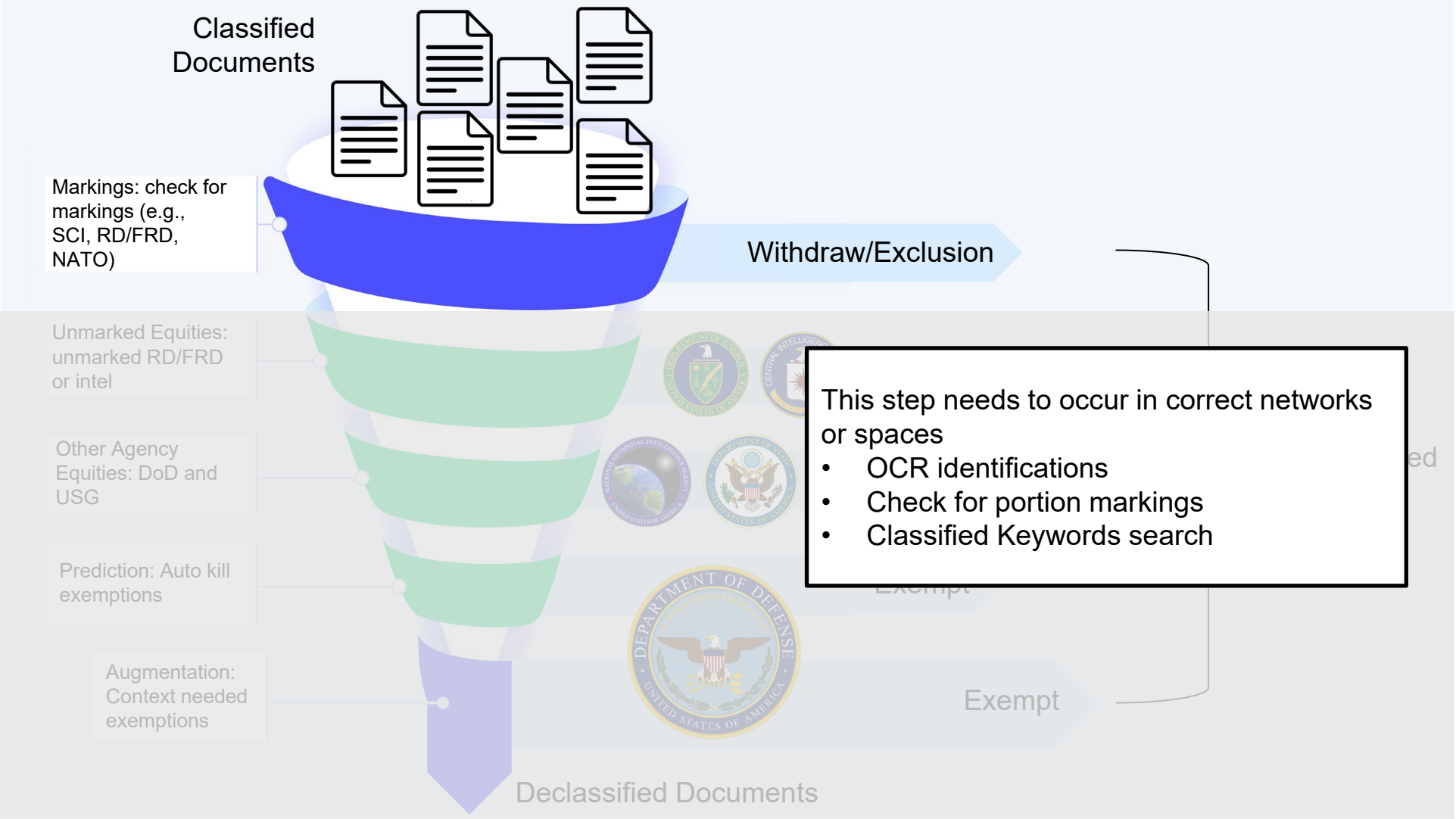
Mapping individual exemptions to AI models (White box approach)



- Each exemption rule is mapped to a model
- **Contextual understanding models, combined with other AI/ML/NLP models mapped to declassification exemptions (business rules) can bridge the gap between CONTENT and CONTEXT – Lead to identification of sensitive or classified material—aka "THE WHY"– information is flagged for protection in accordance with Declassification Guide Exemptions**
- If model is incorrect, it can be updated
- Modularity is built into the system
- Each model can be explained
- LLMs can still have a place, if the right mode for the job
- Allows for training data to be saved for the future

- **"Year Zero to Year 5" Approach**
- **Annotated data from Declassification SMEs will improve the accuracy of the models to a high confidence level that they will identify sensitive information as intended**


Classified Documents
Markings: check for markings (e.g., SCI, RD/FRD, NATO)
Unmarked Equities: unmarked RD/FRD or intel
Other Agency Equities: DoD and USG
Prediction: Auto kill exemptions
Augmentation: Context needed exemptions
Withdraw/Exclusion
Exempt
Refer
Exempt
Exempt
Not Released
Declassified Documents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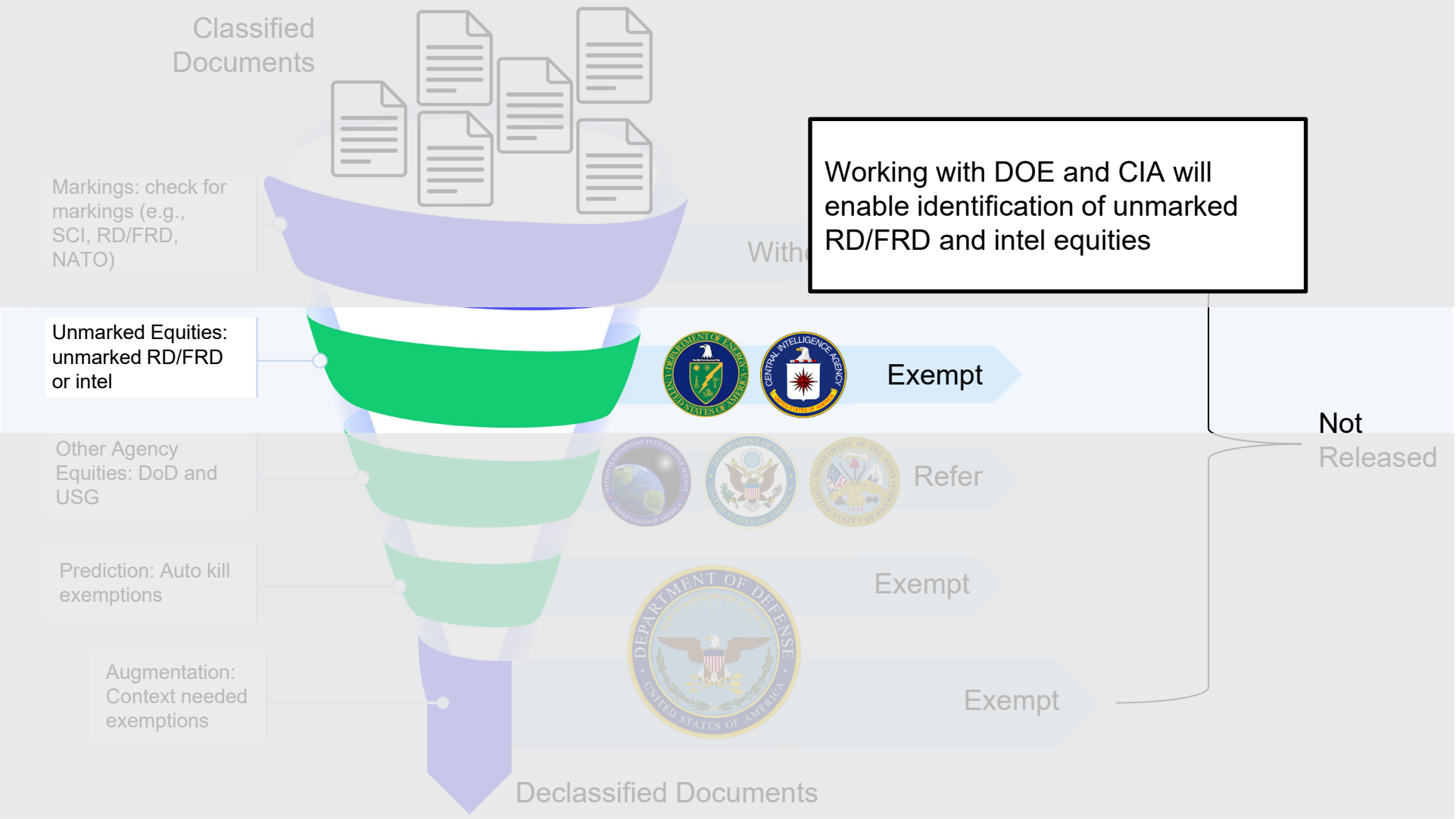
Other Agency Equities: DoD and USG
Prediction: Auto kill exemptions
Augmentation: Context needed exemptions
Exempt
Declassified Documents
This step needs to occur in correct networks or spaces
• OCR identifications
• Check for portion markings
• Classified Keywords search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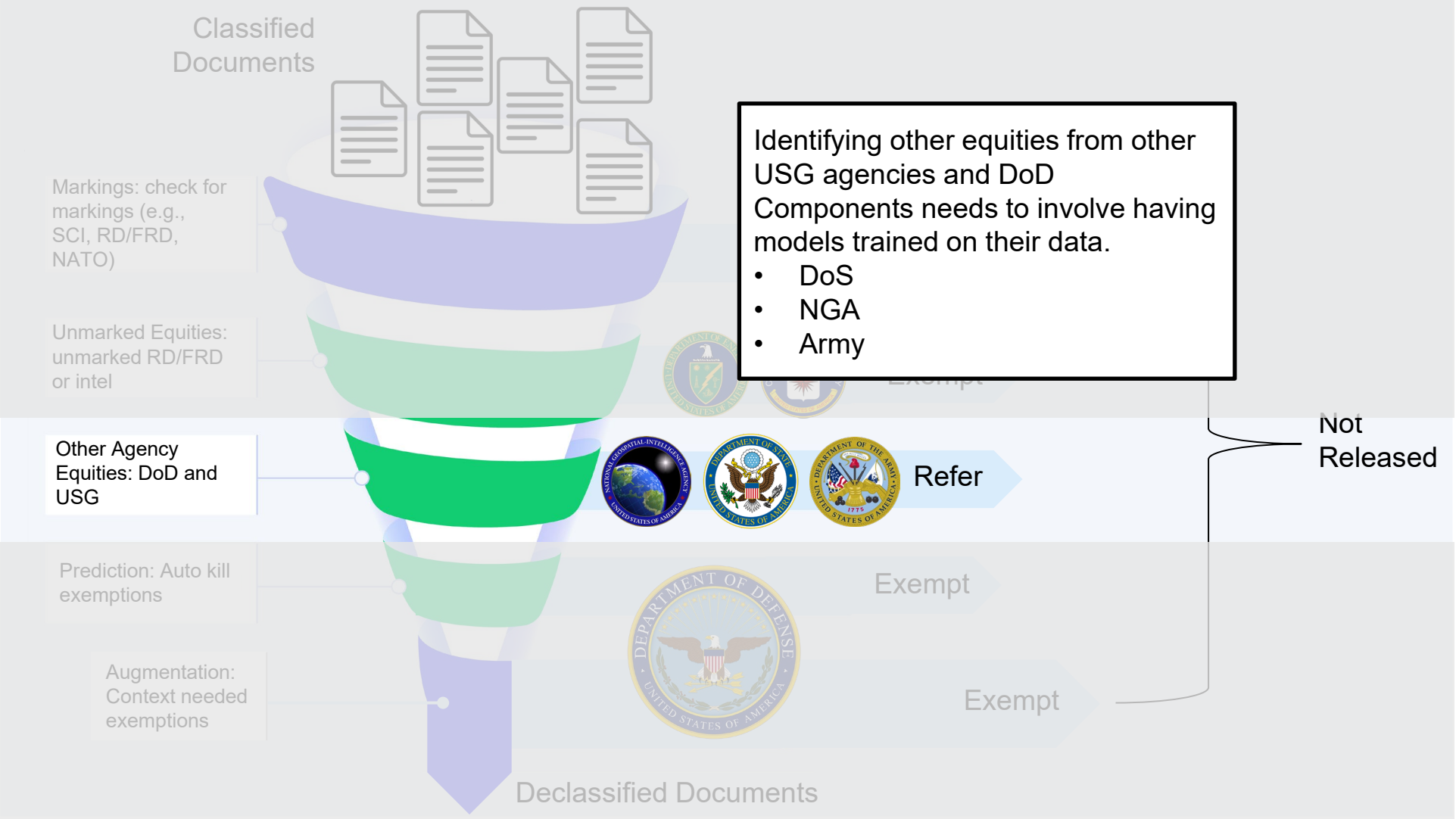
Prediction: Auto kill exemptions
Augmentation: Context needed exemptions
Exempt
Refer
Exempt
Exempt
Declassified Documents
Working with DOE and CIA will enable identification of unmarked RD/FRD and intel equities
Not Released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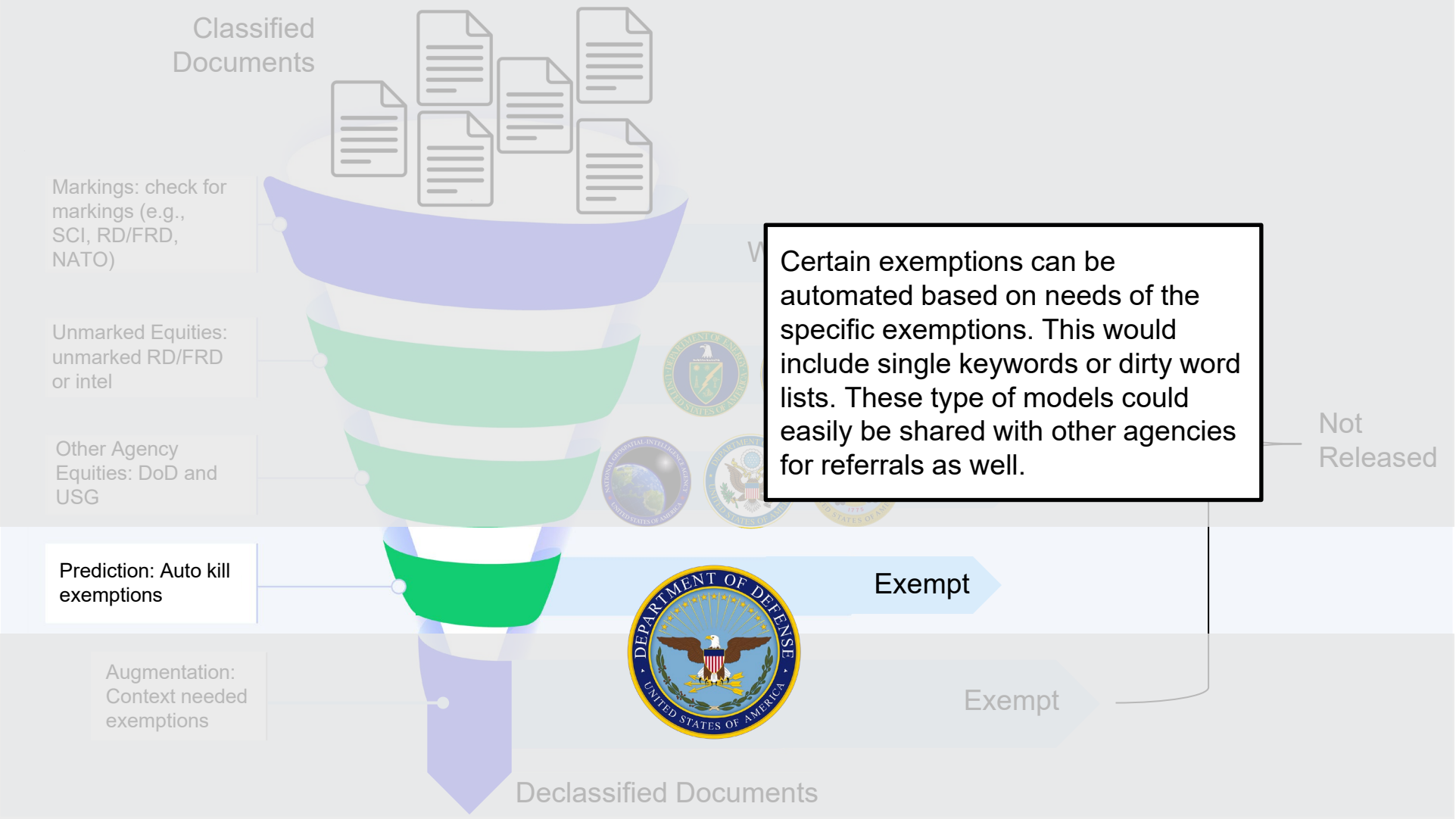
Other Agency Equities: DoD and USG
Prediction: Auto kill exemptions
Augmentation: Context needed exemptions
Refer
Exempt
Exempt
Identifying other equities from other USG agencies and DoD Components needs to involve having models trained on their data.
• DoS
• NGA
• Army
Not Released
Declassified Documents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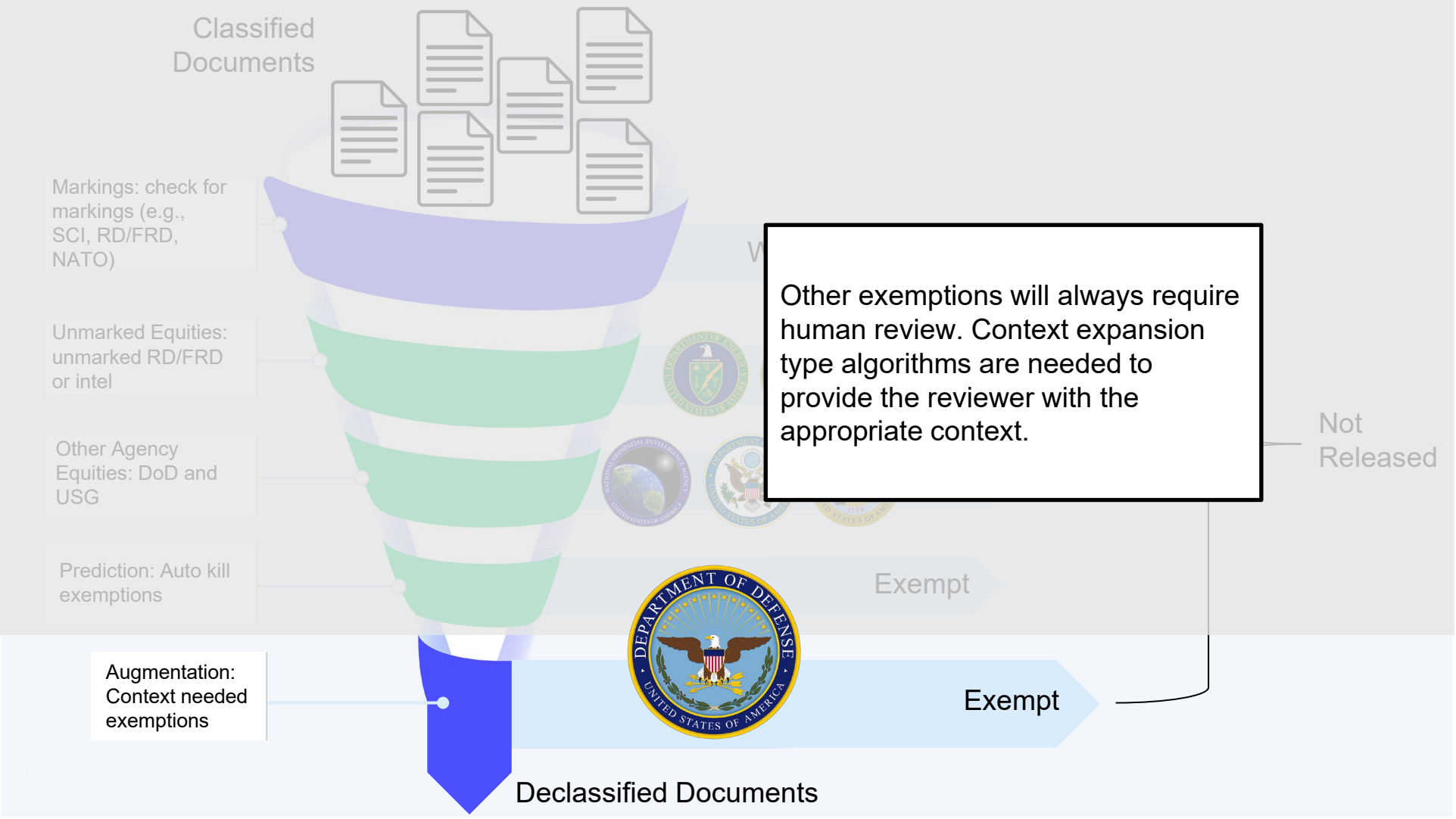
Unmarked Equities: unmarked RD/FRD or intel
Other Agency Equities: DoD and USG
Prediction: Auto kill exemptions
Augmentation: Context needed exemptions
Exempt
Exempt
Not Released
Declassified Documents
Certain exemptions can be automated based on needs of the specific exemptions. This would include single keywords or dirty word lists. These type of models could easily be shared with other agencies for referrals as well.



Other exemptions will always require human review. Context expansion type algorithms are needed to provide the reviewer with the appropriate context.

Summary of Briefings

- DoD
  - Army G2
  - Army CIO
  - Army OSINT
  - Army SAP
  - CDAO – Task Force Lima (TFL)
  - Declassification Program Advisory Group (DPAG)
  - DoD INFOSEC Senior Leaders (DSEAG/EXCOM)
  - NGA
  - SAF/AA
  - SAF/AQ
- USG Declassification Components
  - CIA
  - Department of Energy
  - Department of State
  - ODNI
  - NSA
- Other USG and Allies
  - DIA InfoCon
  - NATO
  - NSC Classification and Declassification Information Management Sub-IPC
  - Public Interest Declassification Board (PIDB) x2
  - SSCI/HSGAC/SASC
- Non-Declassification
  - Department of State FRUS
  - OMB
  - OUSD(I&S) FOIA
  - OUSD(I&S) Foreign Disclosure

Industry

Vendors

Consultants

Domains with Similar Problems

Test and Evaluation

Implementation

Previous Work

U.S. Government - Other Stakeholders

Congress NSC Executive Branch PIDB NARA

Input into legislation, EOs, and policy

Awareness on Updates

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Acquisition & Industrial Security (A&IS)

Previous Research

Unclassified Research Questions

Students Professors Researchers

ACADEMIA

Other Academic Institutions

UMD

INSURE Consortium

Reports Briefs Best Practices

Data & Models Resources Pilots Use Cases

Domain Expertise Infrastructure

U.S. Government - Data Classifiers and Declassifiers

Capability Testing: Operationalizing the Declassification Guides

- Focused on declassification process Review functions
- Development performed at the unclassified level to apply and demonstrate **state-of-the-art capabilities**
- Anticipated continuous development and integration of technological improvements by using **modular software** (e.g., Natural Language Processing (NLP) models evolve)
- Operationalized the Declassification Guides (DGs) by working with declassification reviewers to identify potential augmentation capabilities

Named Entity Recognition

Input

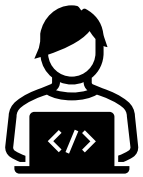
Raw text of a document

Description

A machine learning-based tool that identifies key phrases (“named entities”) in a body of text and categorizes them (e.g., product, ordinal number, person, etc.).

Output

Words or phrases from the text tagged with an entity label based on what the model can recognize (e.g., “Agent Orange” => “Product”, “Fifty pounds” => “Amount”)



Expected Use Case

- *Quickly identify terms and categories (e.g., location or product) of interest to a reviewer*

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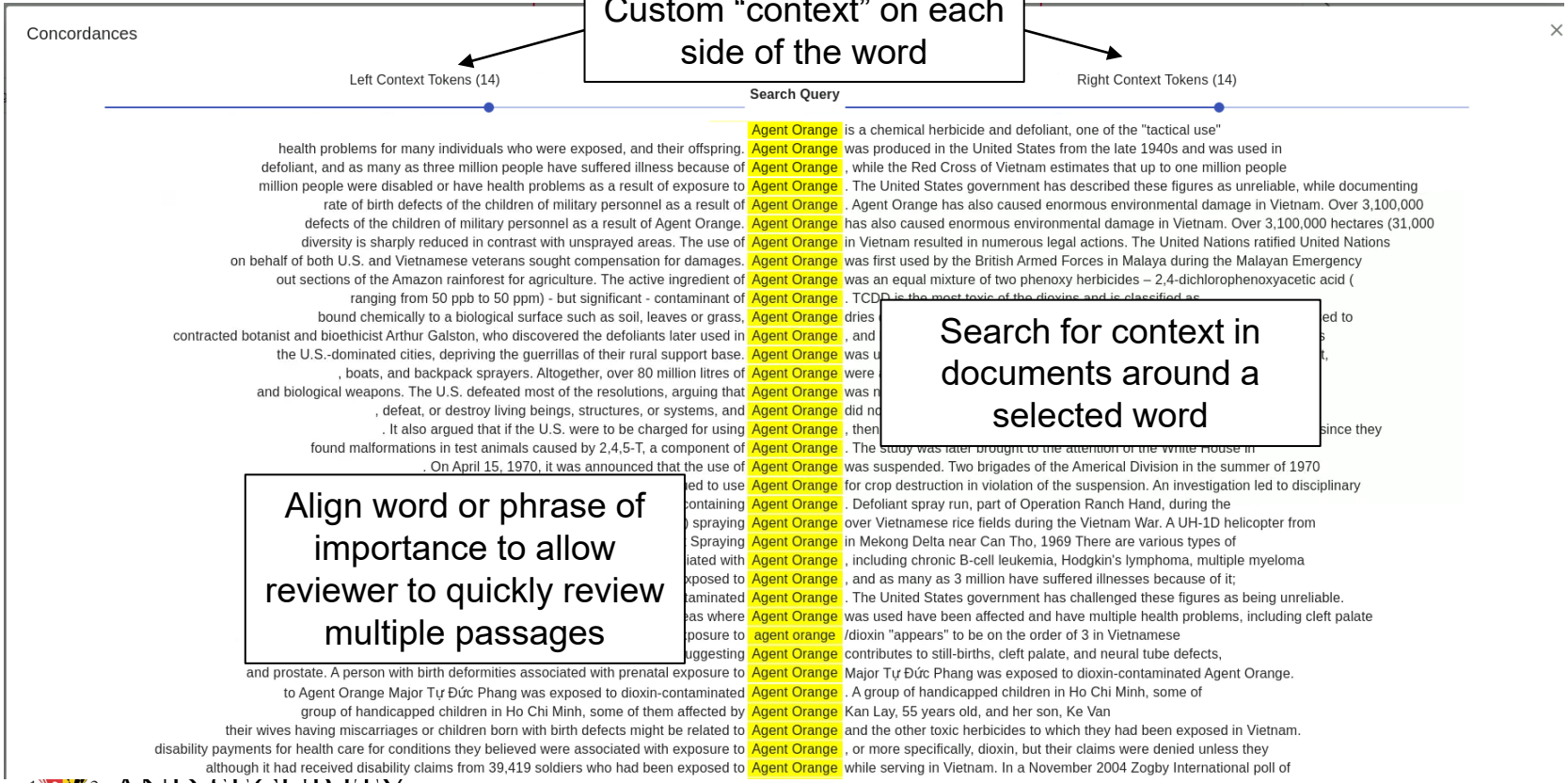
*Demonstration data is unclassified

Contextual Search – Named Entity Recognition (NER)



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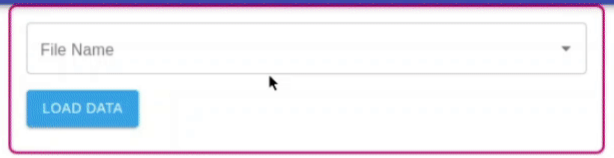
Contextual Search – Named Entity Recognition (NER)

Next Capability

*Demonstration data is unclassified



Load Desired Document

Concordance

Input

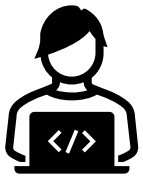
Multiple Documents

Description

Concordances are essentially an on-demand search tool for a set of documents. Concordances are used to quickly scan through a user-specified set of documents and display exactly where certain words/phrases are located, along with their context.

Output

A display containing the portions of the documents, if any, that the tool highlights as containing matches to the search.



Expected Use Case

- *Quickly expanding context around a specific word or phrase among multiple documents*

Multi Search

Input

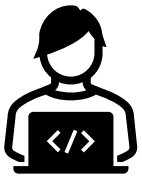
Raw text from a set of documents
A list of keywords/phrases to search for

Description

An NLP/machine learning-based tool that searches a set of documents for all instances where a given set of words/phrases occur near each other

Output

A display containing the portions of the documents, if any, that the tool highlights as containing matches to the search.



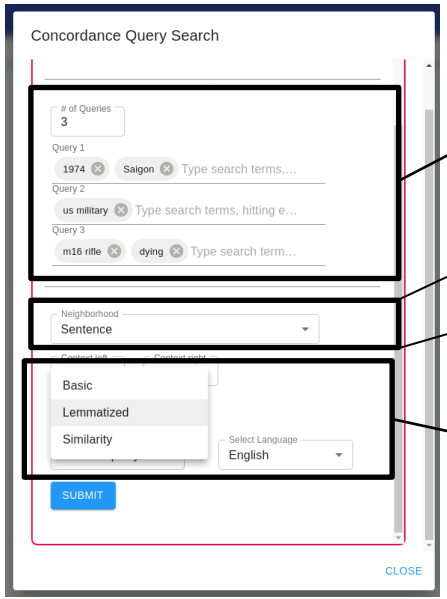
Expected Use Case

- *Identify when multiple words appear together in various contexts*

Next Capability

*Demonstration data is unclassified

Contextual Search – Multi Search



Custom searches of individual or multiple words or phrases

Provide context by displaying surrounding sentences, paragraphs, or documents

Different types of search:
Basic – exact match
Lemmatized – match stems (e.g., military = militaries)
Similarity – match synonyms

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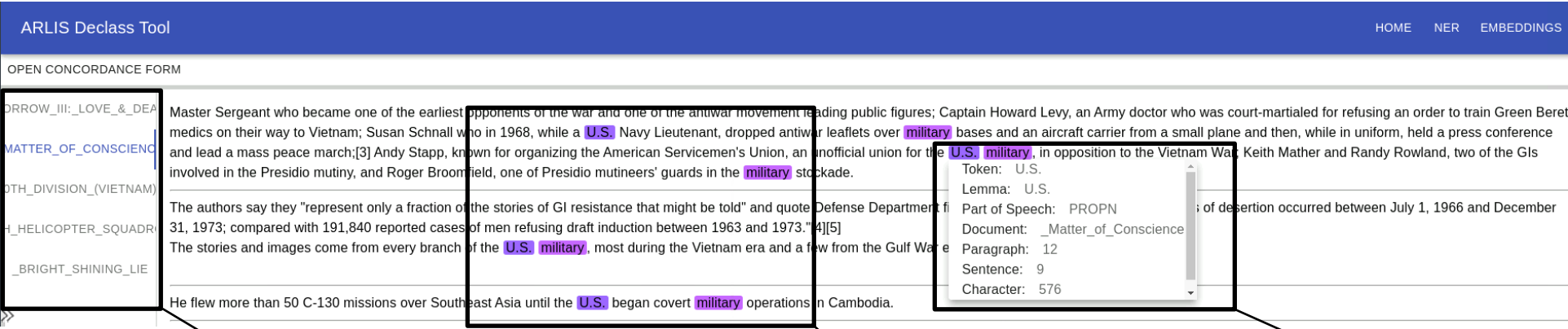
*Demonstration data is unclassified

Contextual Search – Multi Search



Searches among multiple documents

Search for “U.S. military” provides sentences that contain U.S. + military even if not next to each other

Meta data around individual words or phrases

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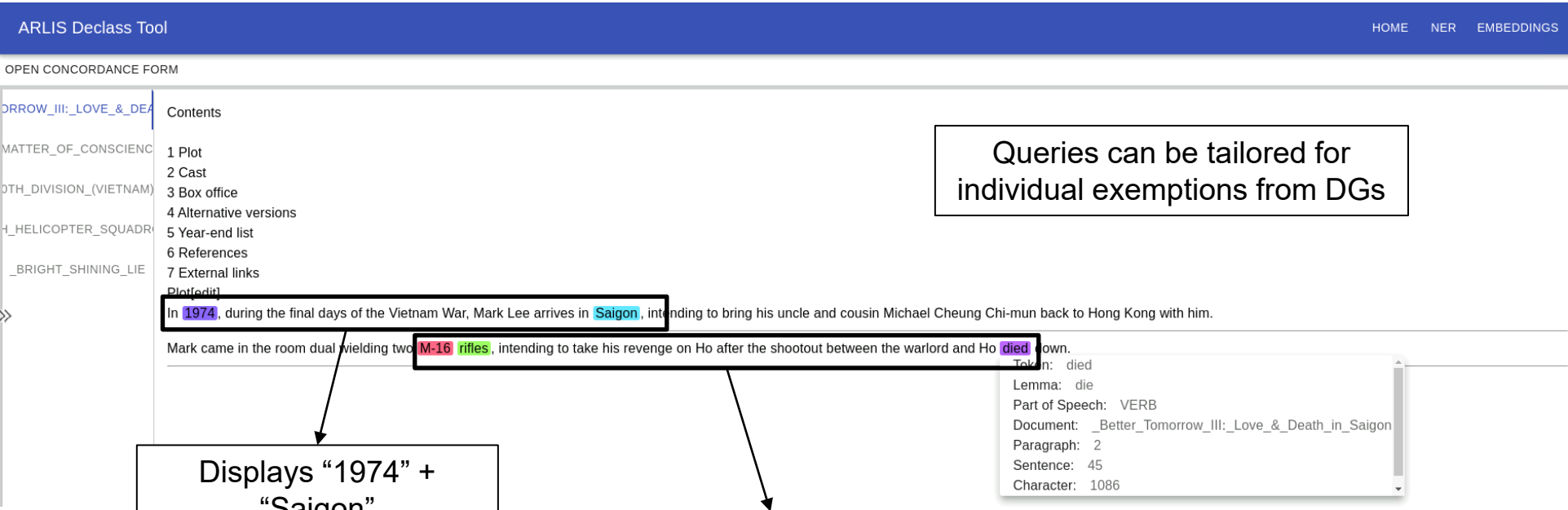
*Demonstration data is unclassified

Contextual Search – Multi Search



Queries can be tailored for individual exemptions from DGs

Displays “1974” + “Saigon”

Finds “M-16 rifles” + “died” even though query is “dying”

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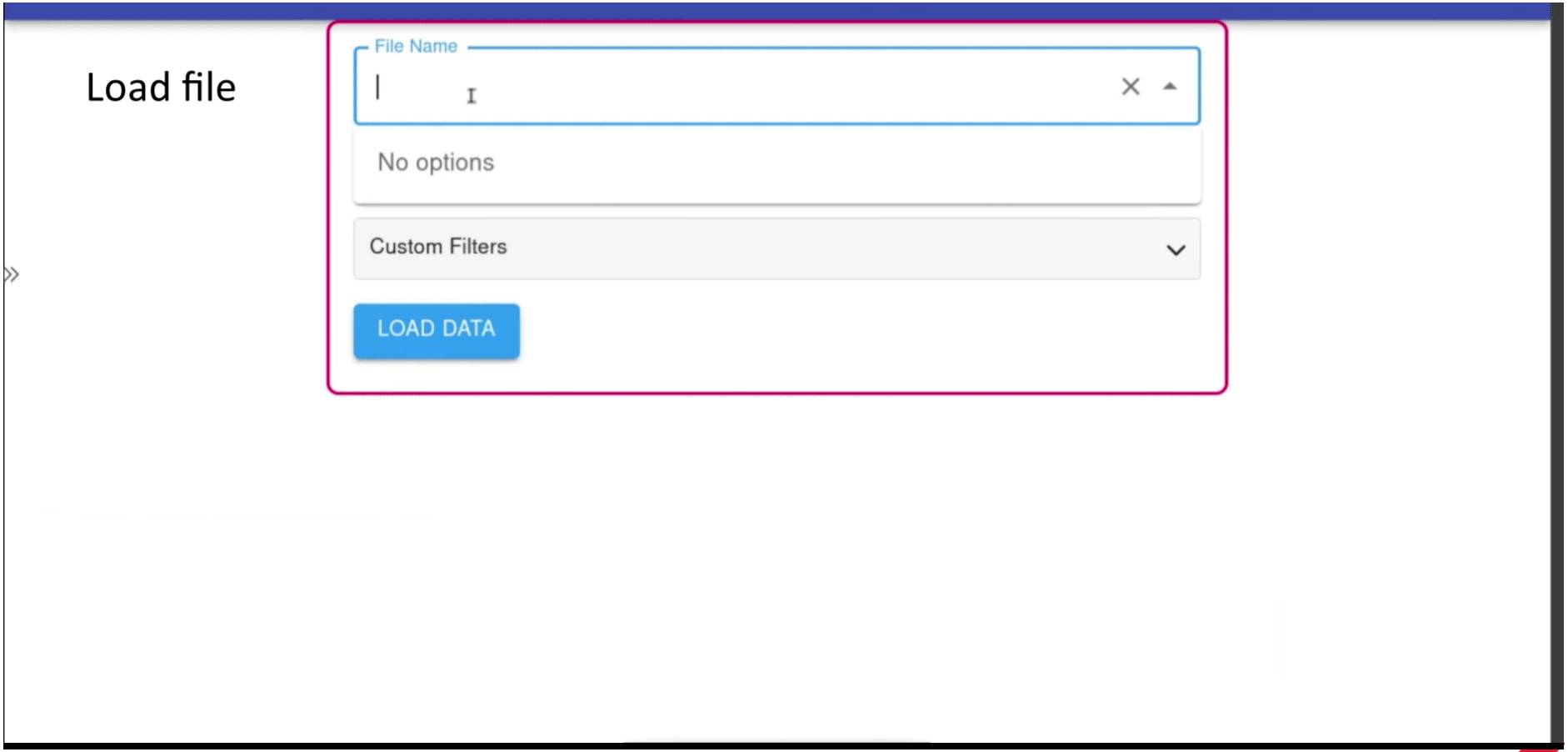
Exemption-based Search

Next Capability

*Demonstration data is unclassified



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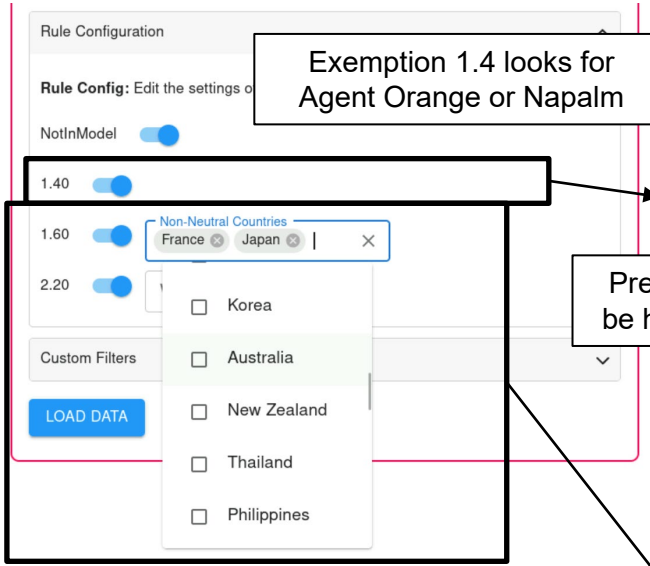
Exemption-based Search



Exemption 1.4 looks for Agent Orange or Napalm

Pre-made exemptions can be highlighted in actual text

Exemption 1.6 looks for references to Neutral Countries in Vietnam

Can edit exemptions as needed

Development

Several herbicides were developed as part of efforts by the United States and the United Kingdom to create herbicidal weapons for use during World War II.

These included 2,4-D, 2,4,5-T, MCPA (2-methyl-4-chlorophenoxyacetic acid, 1414B and 1414A, recoded LN-8 and LN-32), and isopropyl phenylcarbamate (1313, recoded LN-33). | NotInModel

In 1943, the United States Department of the Army contracted botanist and bioethicist Arthur Galston, who discovered the defoliants later used in Agent Orange, and his employer University of Illinois Urbana-Champaign to study the effects of 2,4-D and 2,4,5-T on cereal grains (including rice) and broadleaf crops. | 1.40

While a graduate and post-graduate student at the University of Illinois, Galston's research and dissertation

means to make soybeans flower and fruit earlier. He discovered both that 2,3,5-

d speed up the flowering of soybeans and that in higher concentrations it would

ese studies arose the concept of using aerial applications of herbicides to destroy enemy crops to disrupt their food supply. In early 1945, the U.S. Army ran tests of various 2,4-D and 2,4,5-T mixtures at the Bushnell Army Airfield in Florida. As a result, the U.S. began a full-scale production of

it against Japan in 1946 during Operation Downfall if the war had

d 1,100 compounds, and field trials of the more promising ones were

tralia, in order to establish their effects in tropical conditions, as well as at the U.S. testing ground in Florida.

Between 1950 and 1952, trials were conducted in Tanganyika, at Kikore and Stunyansa, to test arboricides and defoliants under tropical conditions. | 1.60

The chemicals involved were 2,4-D, 2,4,5-T, and endothall (3,6-endoxohexahydrophthalic acid).

During 1952–53, the unit supervised the aerial spraying of 2,4,5-T in Kenya to assess the value of defoliants in the eradication of tsetse fly. | 1.60

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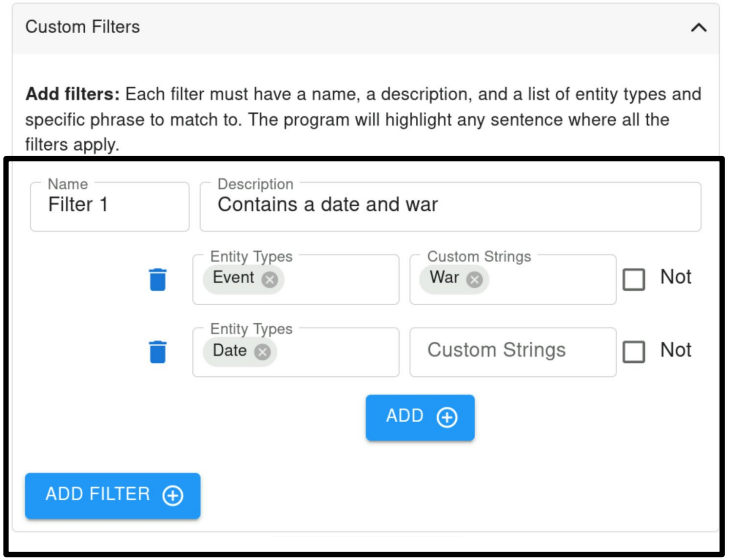
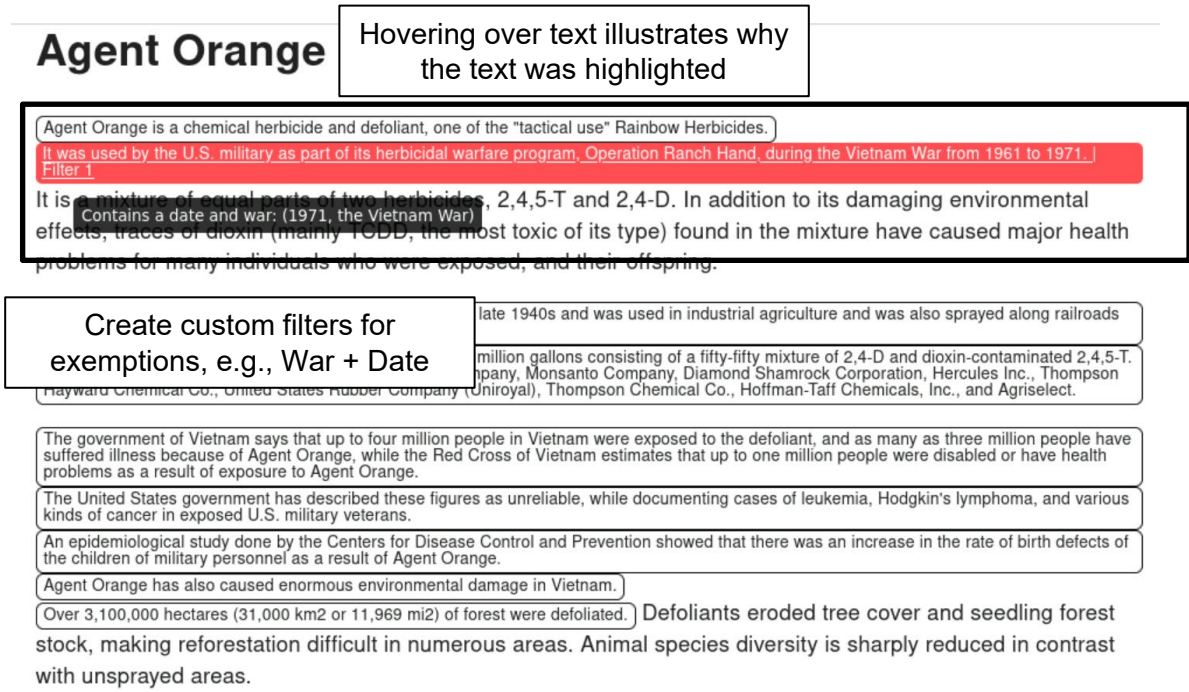
*Demonstration data is unclassified

Exemption-based Search



Create custom filters for exemptions, e.g., War + Date



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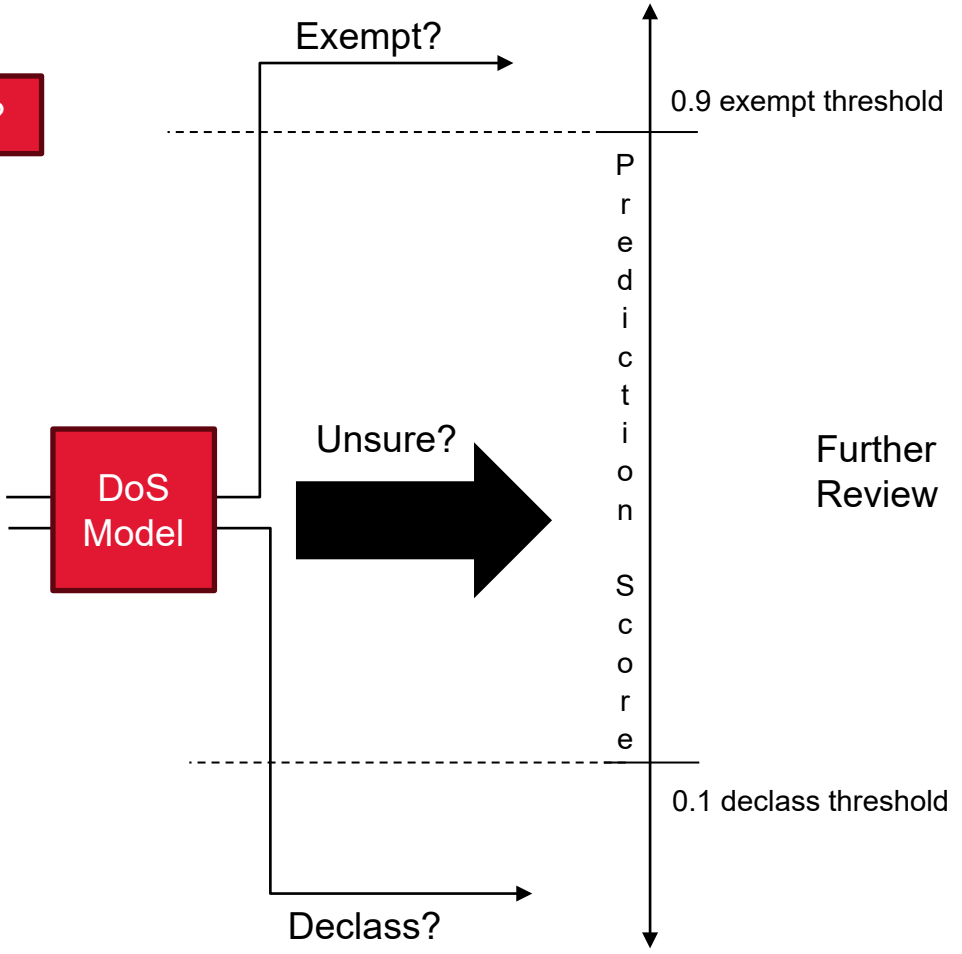
Department of State Model

E.O.11652:N/A
TAGS: CI PFOR
SUBJ: CHILE HOY COMMENT ON US/CHILE TALKS

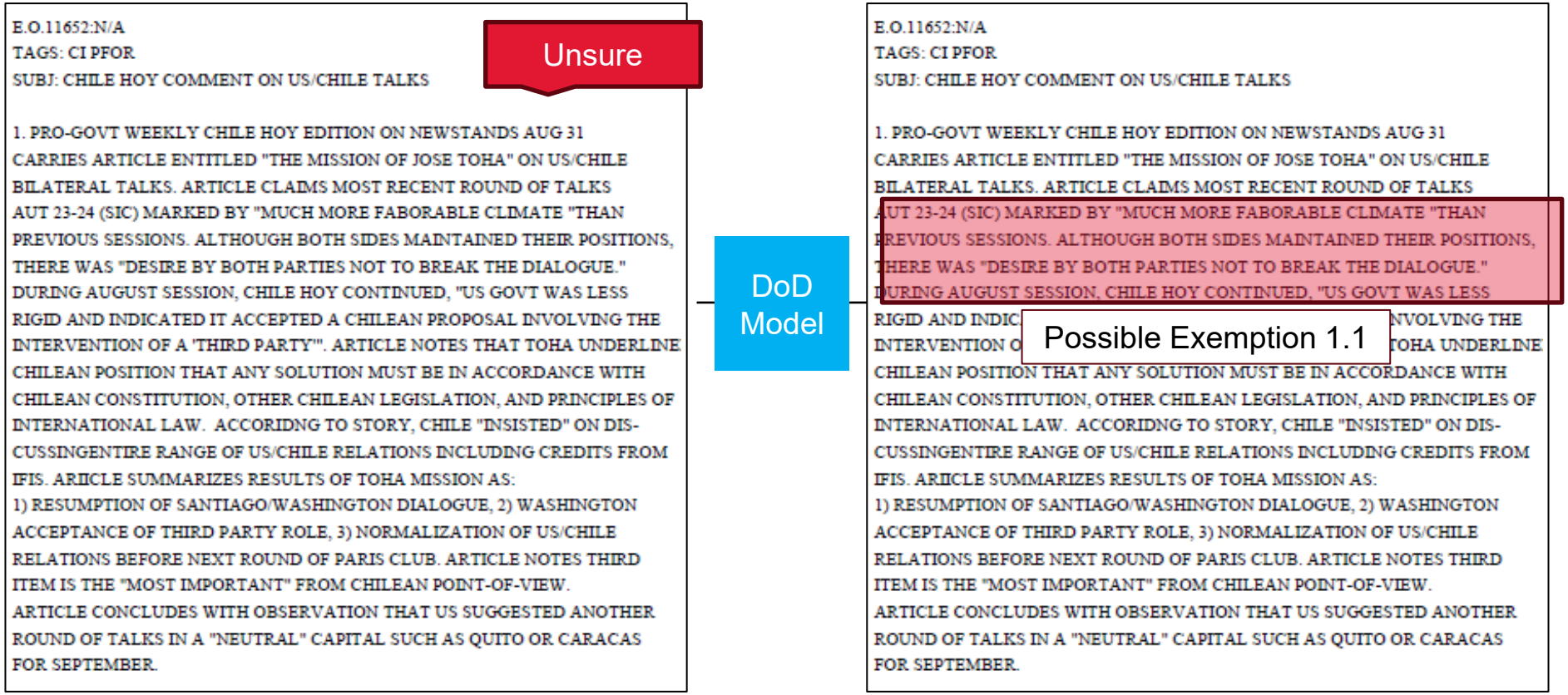
1. PRO-GOVT WEEKLY CHILE HOY EDITION ON NEWSTANDS AUG 31 CARRIES ARTICLE ENTITLED "THE MISSION OF JOSE TOHA" ON US/CHILE BILATERAL TALKS. ARTICLE CLAIMS MOST RECENT ROUND OF TALKS AUT 23-24 (SIC) MARKED BY "MUCH MORE FABORABLE CLIMATE "THAN PREVIOUS SESSIONS. ALTHOUGH BOTH SIDES MAINTAINED THEIR POSITIONS, THERE WAS "DESIRE BY BOTH PARTIES NOT TO BREAK THE DIALOGUE." DURING AUGUST SESSION, CHILE HOY CONTINUED, "US GOVT WAS LESS RIGID AND INDICATED IT ACCEPTED A CHILEAN PROPOSAL INVOLVING THE INTERVENTION OF A 'THIRD PARTY'". ARTICLE NOTES THAT TOHA UNDERLINE CHILEAN POSITION THAT ANY SOLUTION MUST BE IN ACCORDANCE WITH CHILEAN CONSTITUTION, OTHER CHILEAN LEGISLATION, AND PRINCIPLES OF INTERNATIONAL LAW. ACCORIDNG TO STORY, CHILE "INSISTED" ON DIS-CUSSINGENTIRE RANGE OF US/CHILE RELATIONS INCLUDING CREDITS FROM IFIS. ARIICLE SUMMARIZES RESULTS OF TOHA MISSION AS:
1) RESUMPTION OF SANTIAGO/WASHINGTON DIALOGUE, 2) WASHINGTON ACCEPTANCE OF THIRD PARTY ROLE, 3) NORMALIZATION OF US/CHILE RELATIONS BEFORE NEXT ROUND OF PARIS CLUB. ARTICLE NOTES THIRD ITEM IS THE "MOST IMPORTANT" FROM CHILEAN POINT-OF-VIEW.
ARTICLE CONCLUDES WITH OBSERVATION THAT US SUGGESTED ANOTHER ROUND OF TALKS IN A "NEUTRAL" CAPITAL SUCH AS QUITO OR CARACAS FOR SEPTEMBER.

Prediction?

*unclassified, real cable



Augmenting Department of State Model – **DoD contextual understanding models combined with the DoS approach, can provide the "WHY" information is sensitive**



*unclassified, real cable

Potential Pilot Partner – Department of Energy (DOE)

Goal:

The goal of this effort is to 1) determine applicability of DoD methods for Kyl Lott and other DOE equities and 2) learn more about DOE declassification modernization efforts.

Impact

This partnership is expected to reduce the workload of the DoD reviewer in identifying DOE equities.

DoD to provide:

- *DoD to provide test documents*
- *ARLIS to provide methodology and algorithms*

Task Summary & Resource Needs

- *Cleared developers with CNWDI*
- *Classified development environment*
- *Reviewers from both DoD and DOE*
- *DOE SCGs and DGs*

DOE to provide:

- *DOE to provide SCGs*
- *DOE to discuss their methods for declassification*

Potential Pilot Partner – Department of State (DoS)

Goal:

The goal of this effort is to 1) test applicability of DoD methods in DoS pipelines, 2) test applicability of cable AI algorithms on DoD documents, and 3) potentially test needs for referral process between DoD and DoS

Impact

This partnership is expected to demonstrate the value of DoD augmentation methods on the declassification process and to illustrate streamlined USG collaboration for HS development projects

DoD to provide:

- *DoD to provide test documents*
- *ARLIS to provide methodology and algorithms*

Task Summary & Resource Needs

- *Cleared developers*
- *Classified development environment*
- *Reviewers from both DoD and DoS*
- *DoS DGs*

DoS to provide:

- *DoS to provide test documents*
- *DoS to provide HS compute infrastructure*
- *DoS to provide DGs*

Potential Pilot Partner – NGA

Goal:

The goal of this effort is to 1) determine best practices for using NLP methods with classification and 2) test the CoNGA SCG workflow using ARLIS methods

Impact

This partnership is expected to study the impact of DoD declassification methods on classification.

This team to provide:

- *ARLIS to provide methodology and algorithms*

Task Summary & Resource Needs

- *Early stages, but could potentially demonstrate ARLIS methods with the NGA CoNGA SCG and subsequent classification*
- *Potential to test CoNGA methodology with RISC 2023 project*

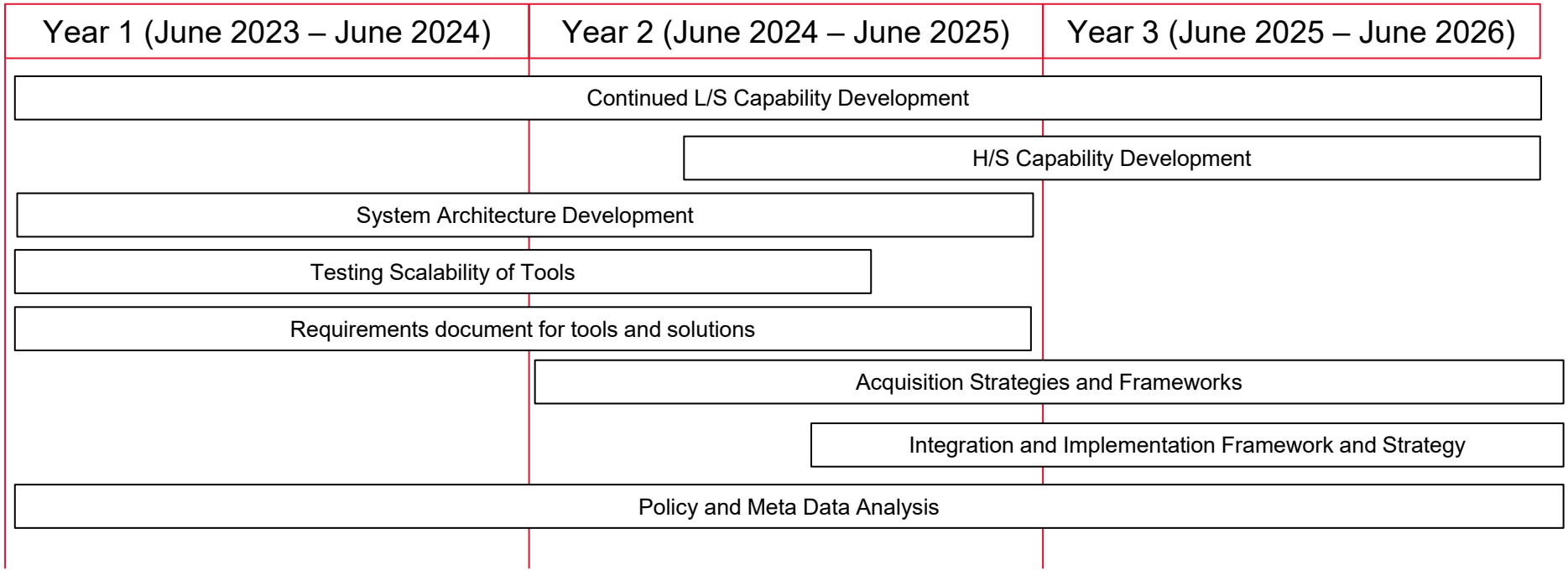
NGA to provide:

- *NGA to provide SCGs*

Phase 3

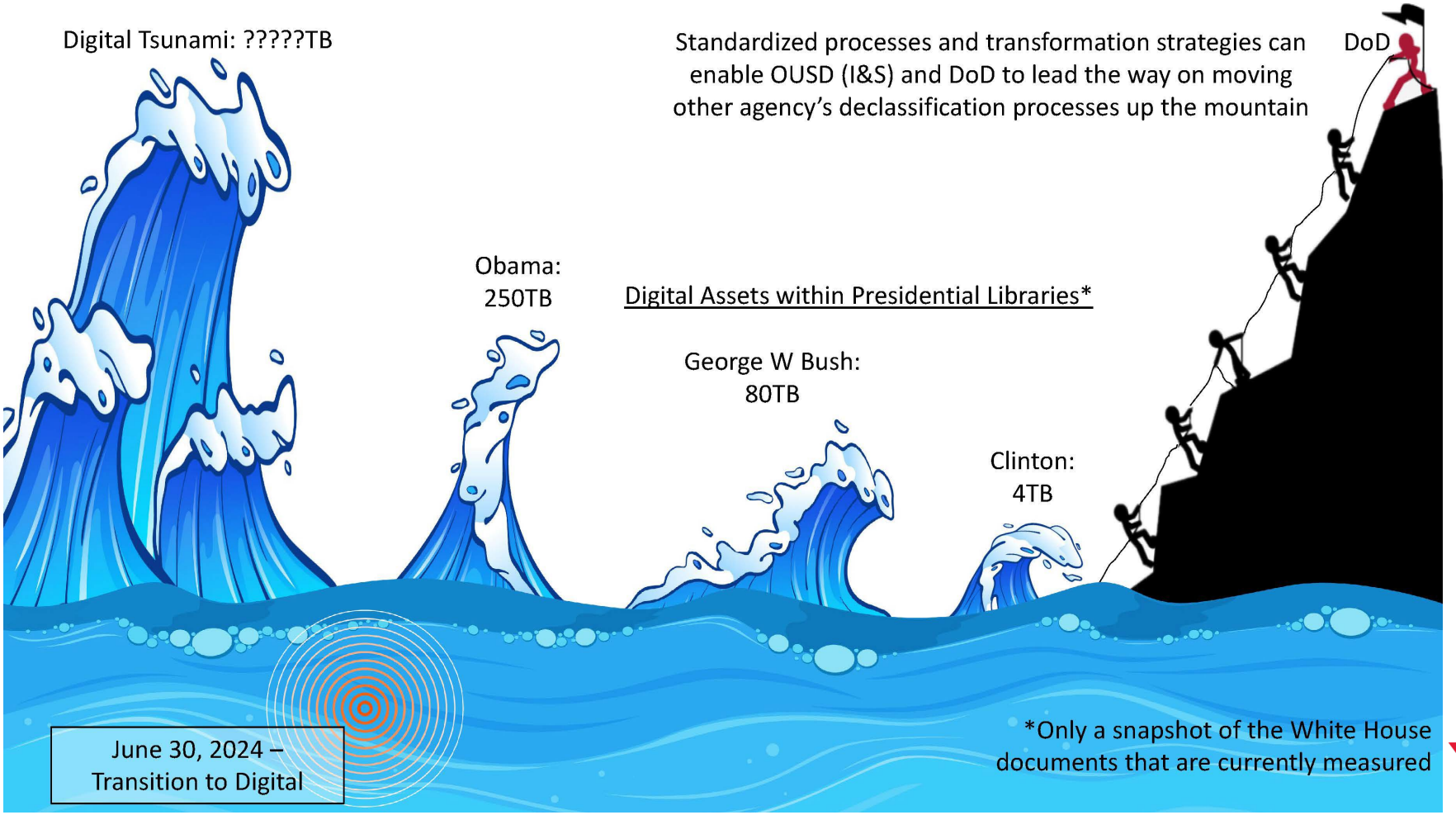
- Agile development
  - Ability to move priorities based on DoD/USG needs and new state of the art capabilities
  - Continuously updated pipeline of activities and tasks
- Flexible deliverables
  - Briefings
  - Reports (executive level, working level, publicly available)
  - Biweekly meetings with stakeholders
  - Interviews as necessary of key components
  - User testing of key declassification tools
- Goals
  - Continued development of technological solutions for declassification process augmentation and improvement
  - Tool and software acquisition strategies
  - Implementation and transformation frameworks

Phase 3 Plan


Year 1 (June 2023 – June 2024)
Year 2 (June 2024 – June 2025)
Year 3 (June 2025 – June 2026)
Continued L/S Capability Development
H/S Capability Development
System Architecture Development
Testing Scalability of Tools
Requirements document for tools and solutions
Acquisition Strategies and Frameworks
Integration and Implementation Framework and Strategy
Policy and Meta Data Analysis

Summary

- A systems engineering approach enables AI/ML/NLP tools to improve declassification procedures
- Improvements can be made now, while still planning for the future
  - This approach can also be used at the origination of classified document creation
- Multiple deliverables
  - 80+ page report (publicly releasable)
  - 5-page executive summary (publicly releasable)
  - Briefing deck (without videos) (publicly releasable)
  - 1-page “glossy” (publicly releasable)
- A whole-of-government approach is needed
  - Interagency collaboration
  - Strategic pilots
  - Identifying, testing, and evaluation of potential transition partners and subsequent capabilities


Digital Tsunami: ?????TB
Standardized processes and transformation strategies can enable OUSD (I&S) and DoD to lead the way on moving other agency's declassification processes up the mountain
DoD
Obama:
250TB
Digital Assets within Presidential Libraries*
George W Bush:
80TB
Clinton:
4TB
June 30, 2024 –
Transition to Digital
*Only a snapshot of the White House documents that are currently measured

Thank You!

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