Developing Responsible, Ethical, and Trustworthy AI Systems for European Defence

Isidoros Monogioudis,
Project Officer Information Technologies
TIU/RTI
30 Oct 2025

EDA AT A GLANCE

Only EU Agency whose Steering Board meets at ministerial level

EDA Steering Board
27 Defence Ministers

chaired by

Kaja Kallas
Head of Agency, HR/VP

EUROPEAN DEFENCE AGENCY

Chief Executive EDA
Andre Denk

+-230 staff
Connected with 2,500 experts in Member States

27 Member States
(All EU Member States)

Administrative Arrangements
with Norway, Serbia, Switzerland, Ukraine and United States

Who we are & what we do

Intergovernmental Agency
of the Council of the European Union

Established in 2004
Based in Brussels

DESIGNED TO BE

1 Main intergovernmental **prioritisation instrument** at EU level in support of defence capability development

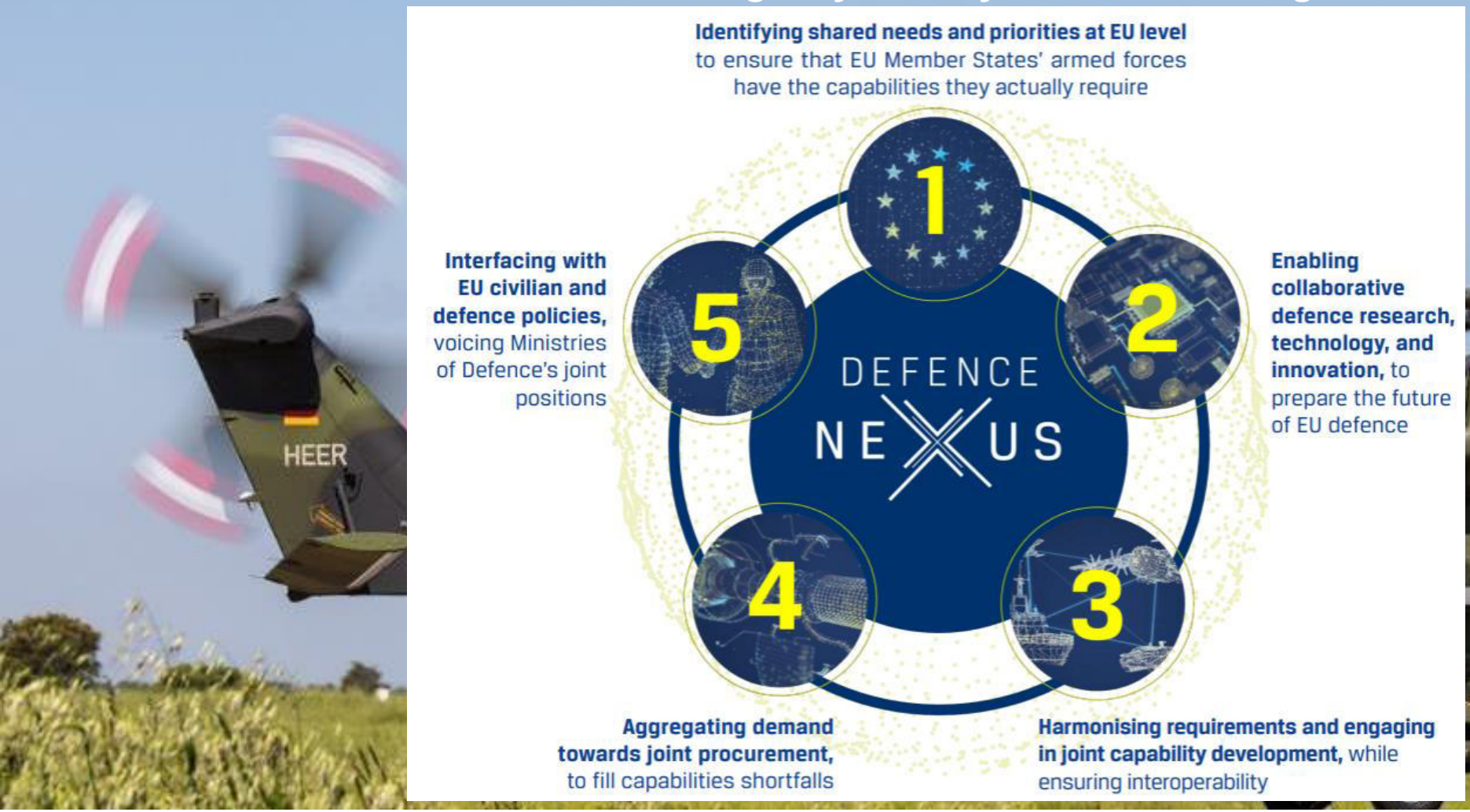
2 Preferred **cooperation forum** for technology and capability development

3 **military interface** between Member States and EU wider policies

EDA as the intergovernmental Defence Nexus at EU level

EDA's LONG-TERM REVIEW 2024,

Ministers of Defence mandated the Agency to carry out the following core tasks:



Research & Technology

- EDA promotes, facilitates and manages Research and Technology activities in 15 technology domains (CapTechs), in order to **develop knowledge and technologies needed for future defence capabilities.**

R&T CONTRACTING TOOLS:

- EDA studies from EDA operational budget (OB)
- Cat B projects funded by Member States, Bottom-up initiatives (Opt In)
- Cat A programmes funded by Member States, Top-down steering (Opt Out)
- Adapted mechanisms

R&T MANAGEMENT TOOLS:

- Identification of technologies - **Technology Watch and Foresight**
- Technology assessment and prioritisation:
  - **Overarching Strategic Research Agenda (OSRA)**
  - **Strategic Research and Innovation Agendas (SRIAs)**
  - **Technology Building Blocks (TBBs) Roadmaps**

AI Landscape in EU Defence

Joint White Paper for European Defence Readiness 2030

"What we invest in defence is how we value our defence. And for the past few decades, we haven't put a high enough price on it. We must spend more. At the same time, the value we add by working together is priceless" said Kaja Kallas, High Representative and Head of the European Defence Agency (EDA).

Critical Defence Capability Domains: defence applications using **military AI** and quantum computing

Transforming Defence through **Disruptive Innovation**

- **AI computing**
- **AI powered military robots**

European Commission AI Continent Action Plan

Launched

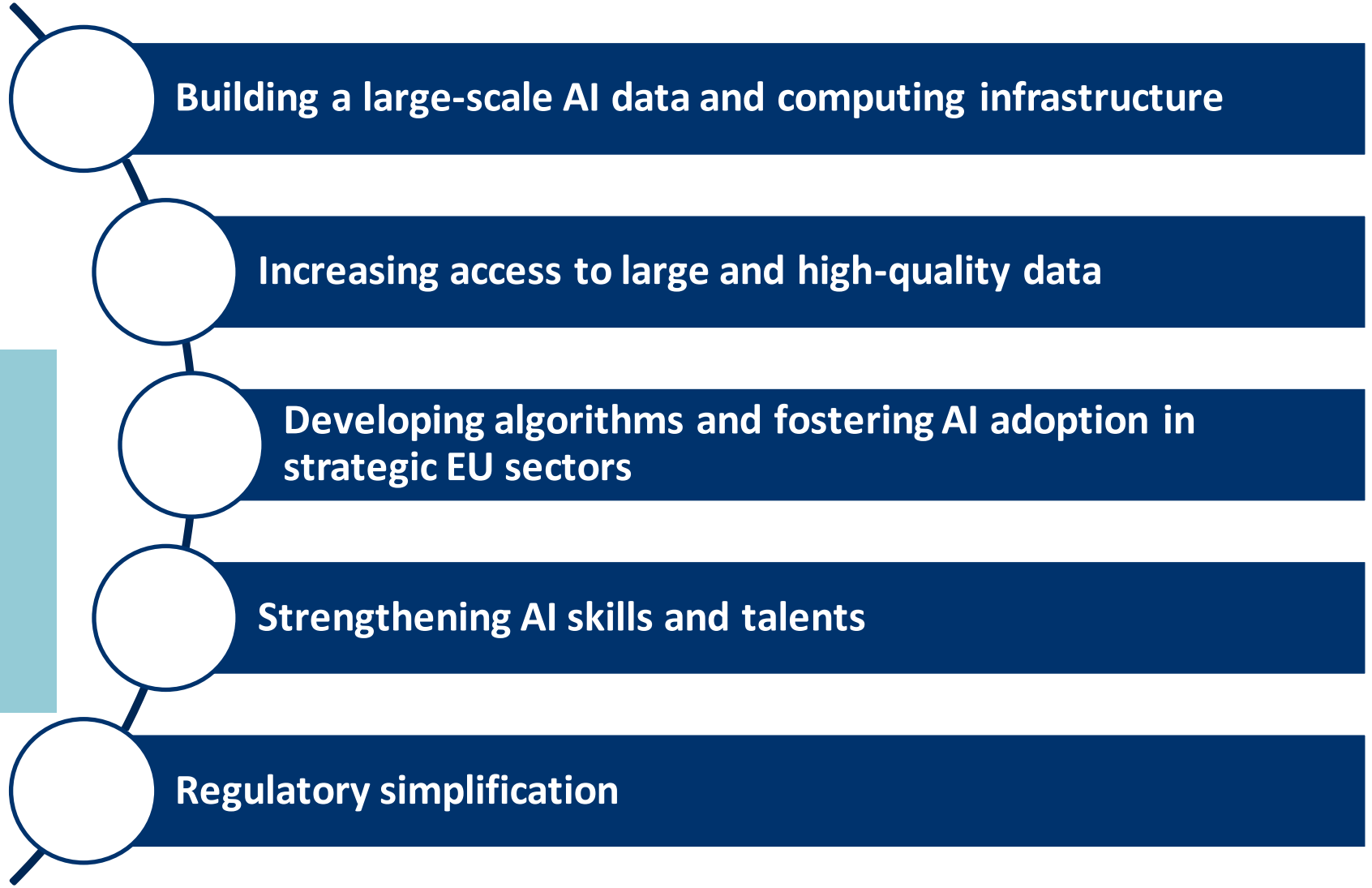
9 Apr 2025

Next Steps:

Cloud and AI Development Act

Apply AI Strategy

Data Union Strategy

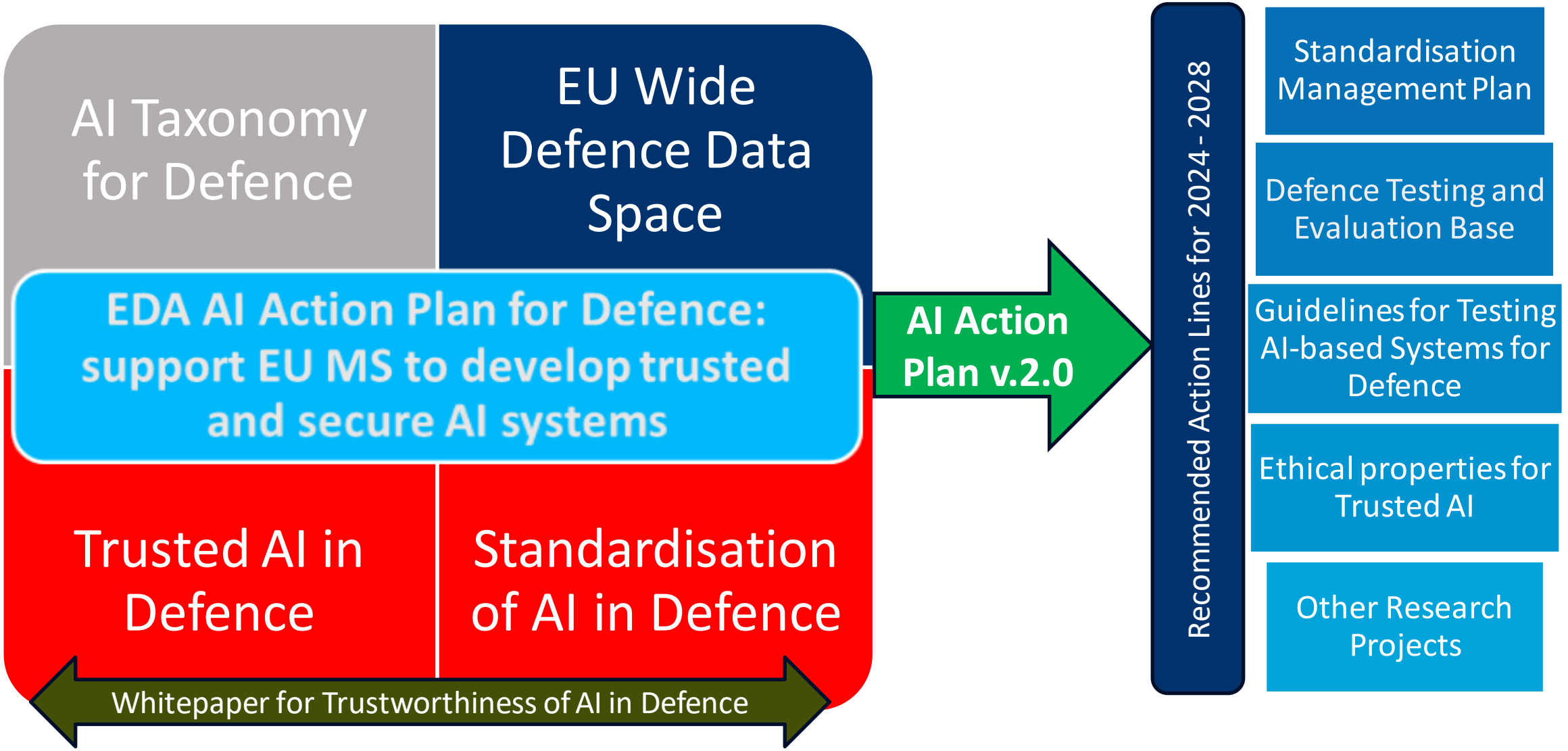


EU Capability Development Priorities

Digital Transformation of Armed Forces

Leveraging from dual-use technologies and innovation using concept development and experimentation within the scope of a rapid evolving Digital Transformation of Armed Forces.

EDA AI Action Plan Overview



TAID Working Group

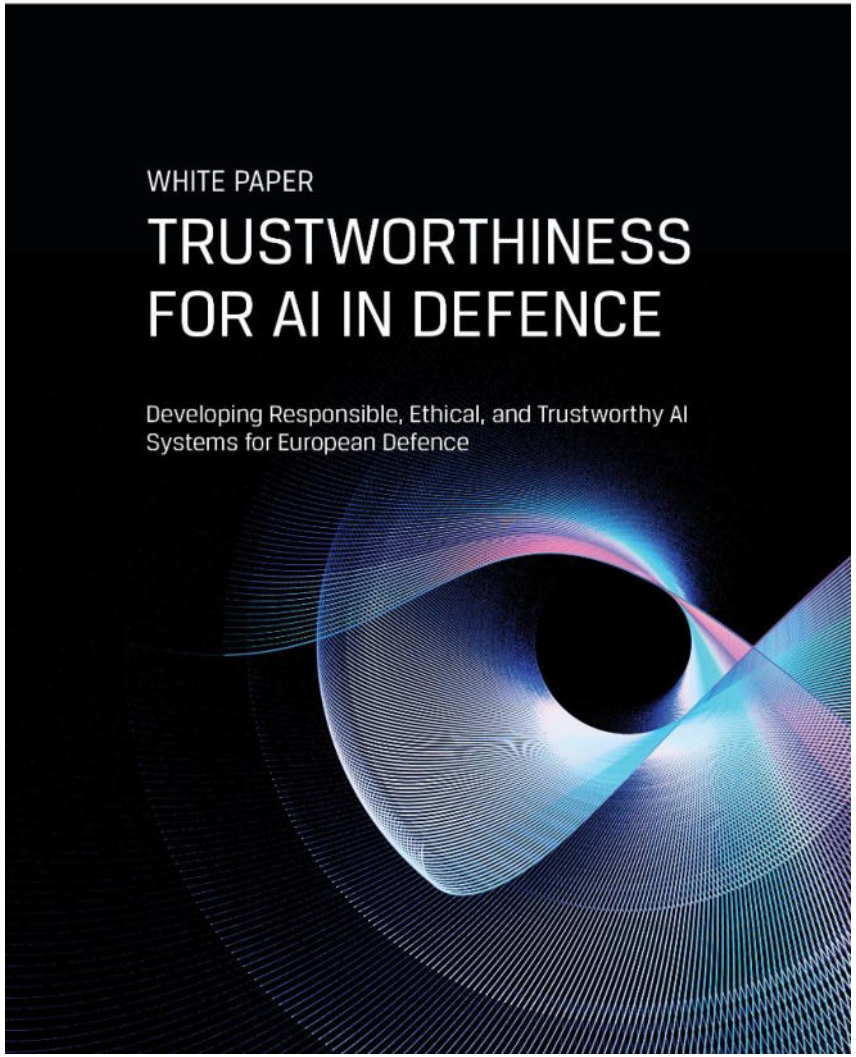
AI Industry Workshop Sep 2023

Trustworthiness for AI in defence (TAID) Working Group

TAID Workshops and Whitepaper draft development (Oct 2023 – Oct 2024)

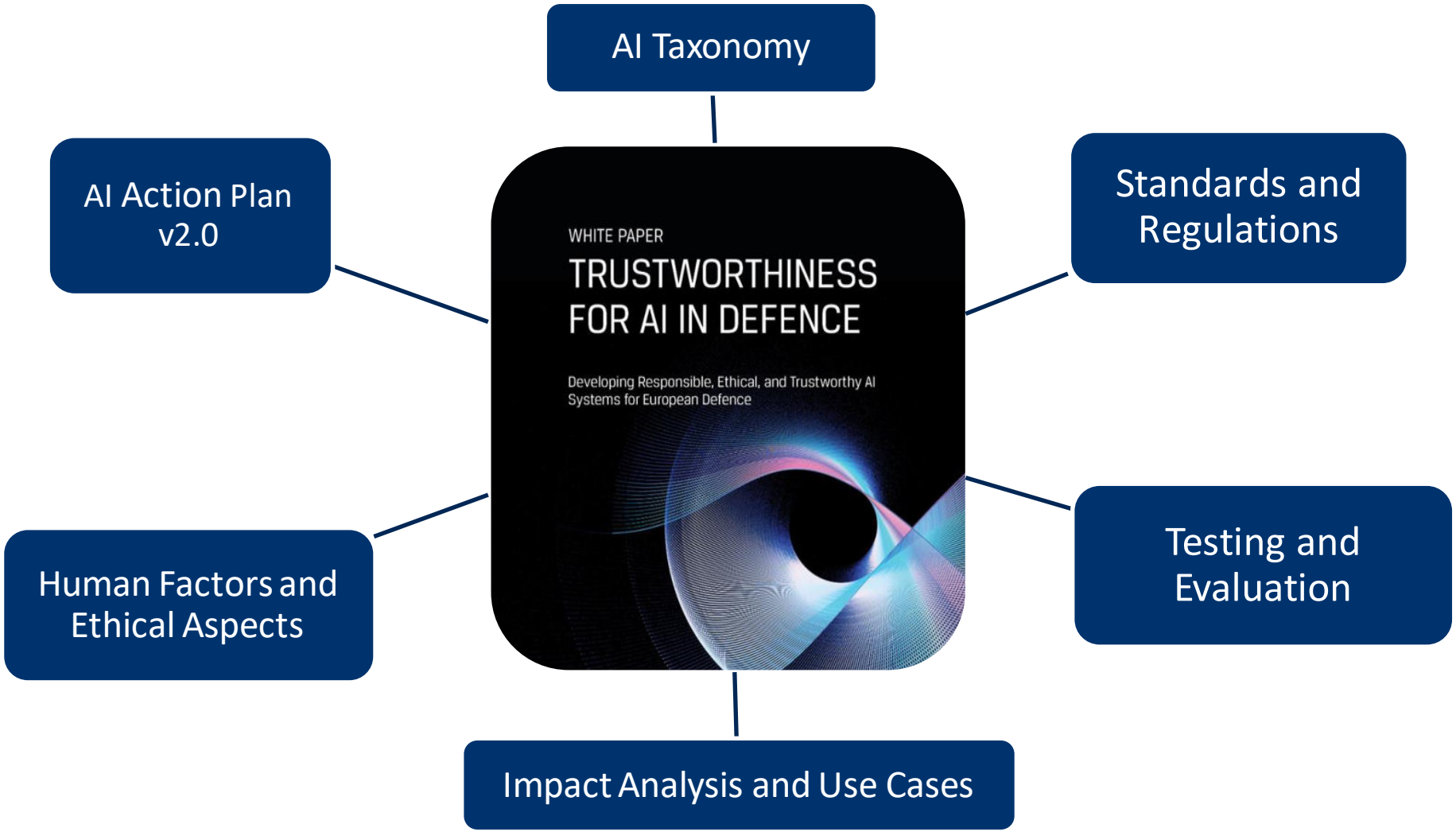
EDA Member States Review and Approval (Oct 2024 – Mar 2025)

TAID Whitepaper – Published 12th May 2025



https://eda.europa.eu/publications-and-data/latest-publications/whitepaper-trustworthiness-for-artificial-intelligence-in-defence#

Trustworthiness of AI in Defence (TAID) Whitepaper



Standards and Regulations

AI Trustworthy Standards


Computational Characteristics of AI systems


AI Conformity Assessment


Data Governance & Quality

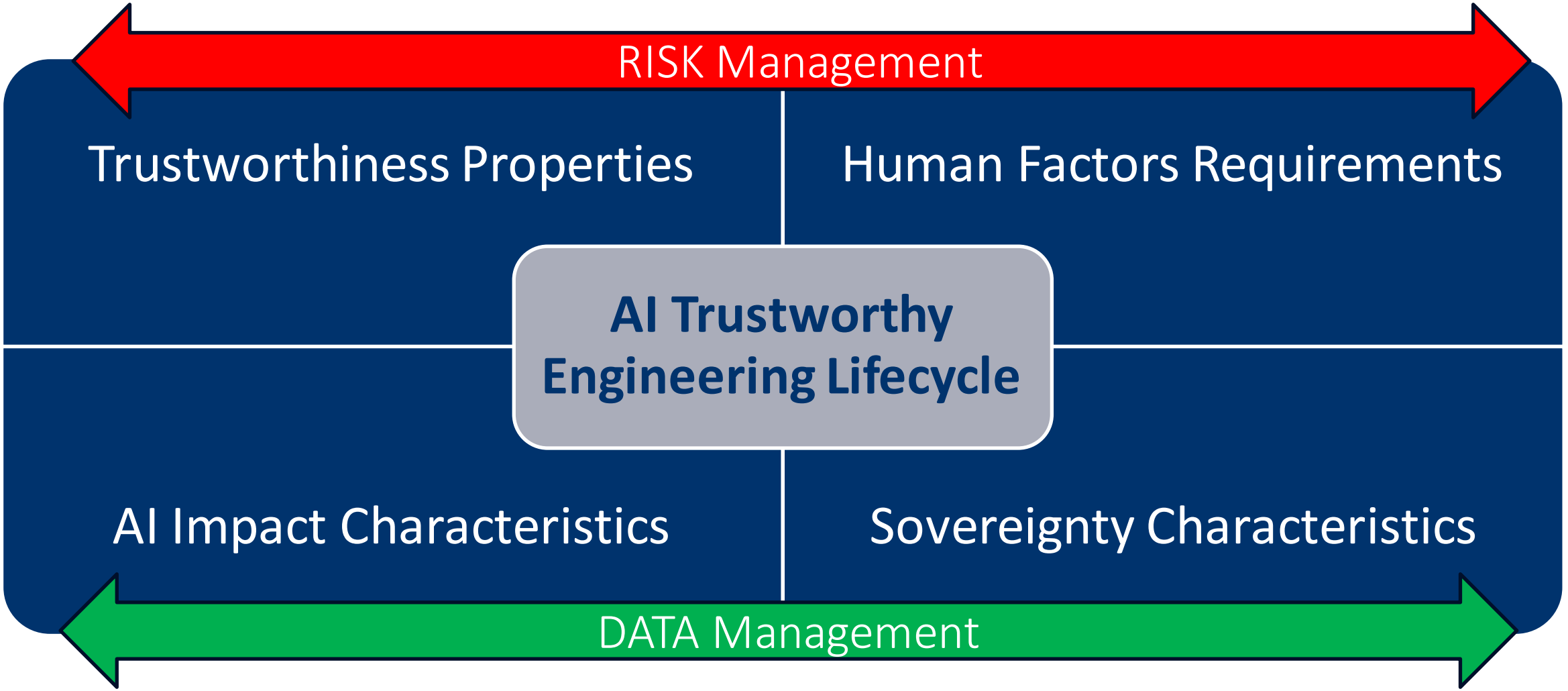

AI Engineering


AI Terminology & Concepts

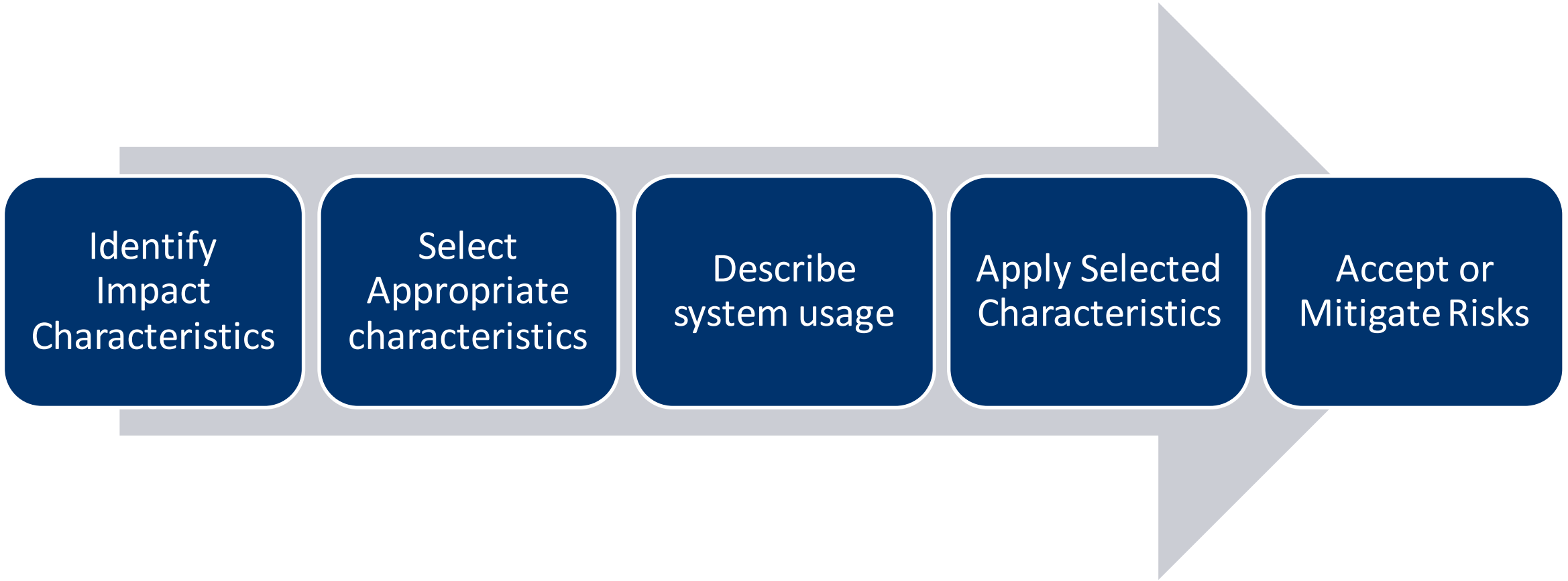

AI Management & Risks


AI Trustworthiness Characteristics

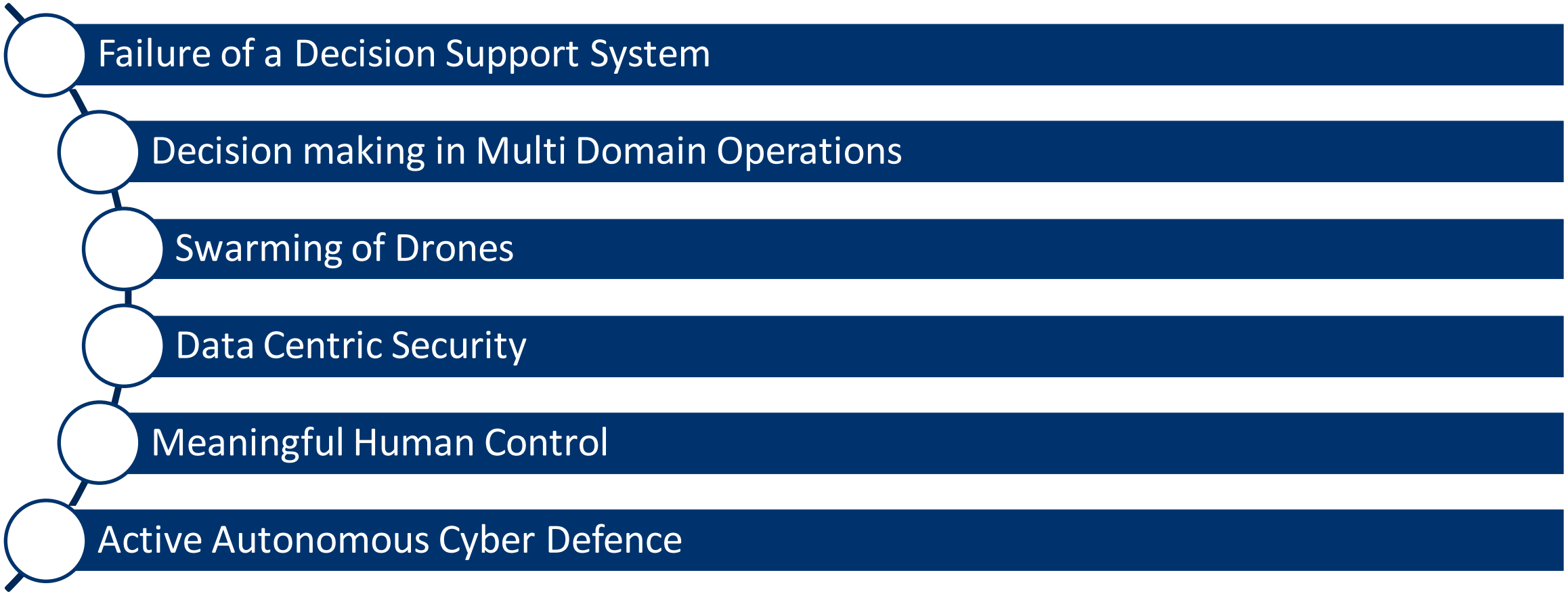
Testing and Evaluation



Impact Analysis & Use Cases



AI Use Cases for Defence



Human Factors and Ethical Aspects

Task Allocation and Training in Human-Machine Teaming

- New roles for humans in AI-driven systems: Overseers, managers, and "sense-checkers".
- The importance of appropriate training to ensure operators are not overloaded or "out-of-the-loop".
- How can we support the correct level of human control in complex autonomous systems?
- Important topics in training.
  - Fatigue management and workload

Meaningful Human Control

- **Human Operator Definition:** The human operator, in the context of AI in defence, refers to the individual responsible for overseeing, controlling, and making critical decisions within AI-enabled systems.
- **Responsibilities for Human Operator:** Human operators bear the responsibility of maintaining accountability and oversight in AI-driven defence systems
- **System Requirements for Ethical AI:** Ethical AI systems in defence must be designed with transparency, accountability, and fairness in mind.
- **No Human-in-the-Loop Cases:** While human-in-the-loop ethics is essential for ensuring the responsible use of AI in defence, there may be scenarios where autonomous AI systems are preferred or necessary.

The Challenge of Ethical AI

- Moving beyond technical capabilities: Ensuring AI aligns with human values.
- The challenges:
  - Defining ethical guidelines that are specific and measurable.
  - Resolving potential conflicts between different values (e.g., security vs. privacy).
  - Ensuring all stakeholders understand and adhere to ethical principles.

Value-Based Engineering

- What is Value-Based Engineering (VBE)?
  - A systematic approach to incorporate ethical values into the design and development of AI systems.
  - Defining a system of interest
- How VBE works:
  - Identifying and prioritizing ethical values.
  - Translating values into specific requirements and design features.
  - Risk assessment and mitigation to address potential value conflicts.
- The Role of the Value Lead:
  - Facilitating ethical discussions and guiding the VBE process.
  - Ensuring that ethical considerations are integrated throughout the lifecycle.

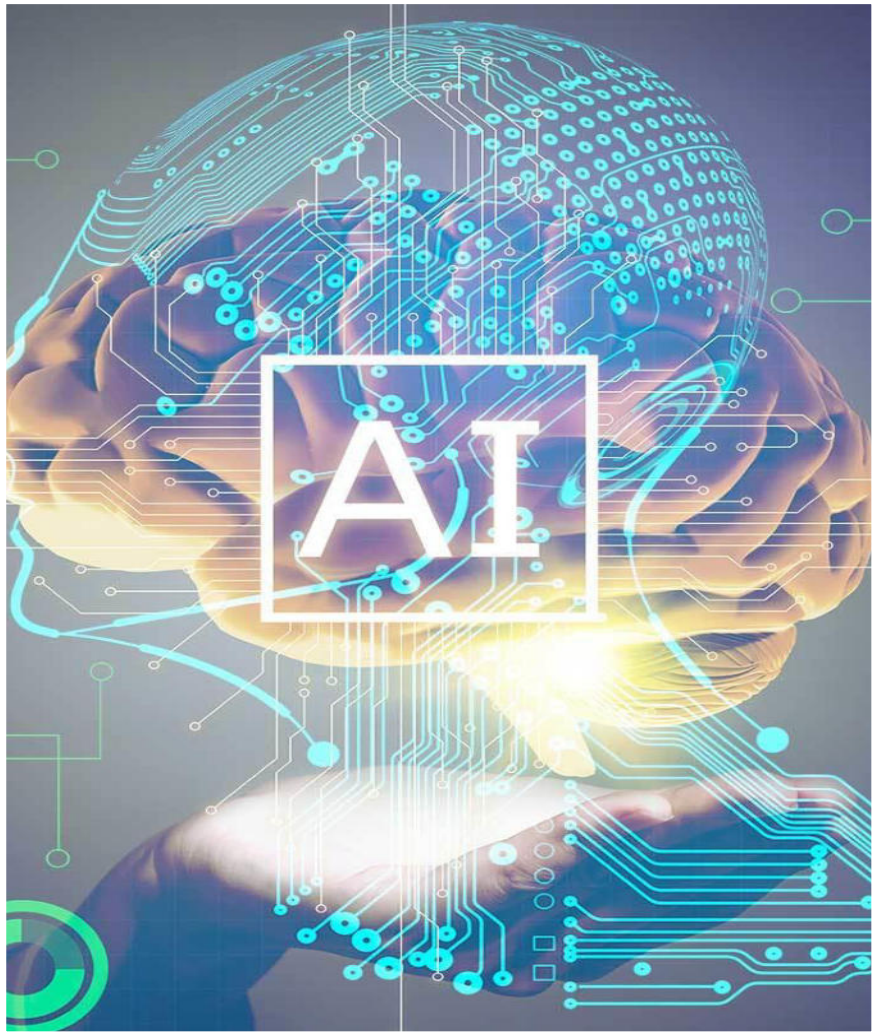
A Path Forward to a More Ethical AI

- Developing comprehensive ethical guidelines tailored for the defence sector.
- Investing in education and training to promote ethical awareness.
- Fostering collaboration among ethicists, engineers, policymakers, and military personnel.
- Implementing robust oversight mechanisms to ensure accountability.

Next steps – AI Action Plan v2.0

- TAID Whitepaper Key Takeaways – Recommended Action Lines

Conclusions – Next Steps



TAID Whitepaper:
- Published after EU MODs approval, 12 May 2025.

EDA Action Plan Update (V.2.0):
- Updated AI Action Plan expected to be approved by end of 2026.

EDA AI Working Group and **AI Community of Interest** (open to ALL) to support the development process

EDA PO INFORMATION TECHNOLOGIES
ISIDOROS.MONOGIOUDIS@eda.europa.eu

Thank you for your attention !