


Yhteistyö ja hankintatoiminta NATO Communications and Information Agency (NCIA) kanssa

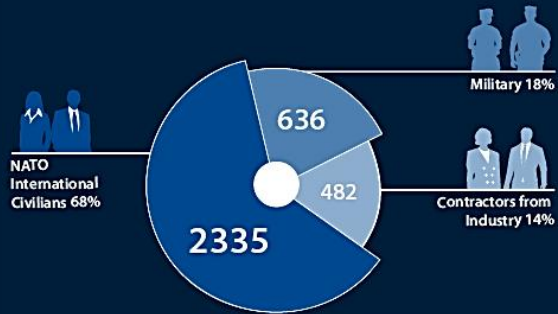
Our Mission to Be Ready



TkT Harri Paananen | Deputy Chief
Command & Control (C2) Centre
NATO Communication and Information Agency (NCIA)

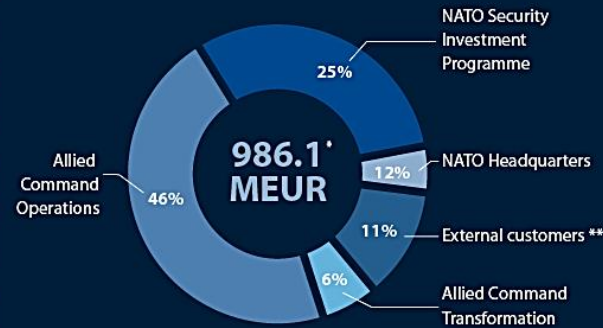
NCIA ON NATON TEKNOLOGIA- JA KYBERKESKUS

Our workforce



3453 total personnel as of 31 January 2025

Value of services and projects



* Preliminary figures before March 2025 financial statements released.

** External customers includes NATO Nations, international organizations and other entities.

Our footprint

5
campuses

- Brussels Headquarters
- The Hague Software-intensive projects and services Innovation
- Mons - Braine-l'Alleud Service operations and cyber security IT infrastructure projects and services. Support to operations and exercises
- Oeiras NCI Academy

30 direct support locations
(CIS Support Units, logistics centres and satellite ground stations)

Our exercises



Our operations and missions



Our service portfolio



Mitä on Command and Control (C2)? OODA loop

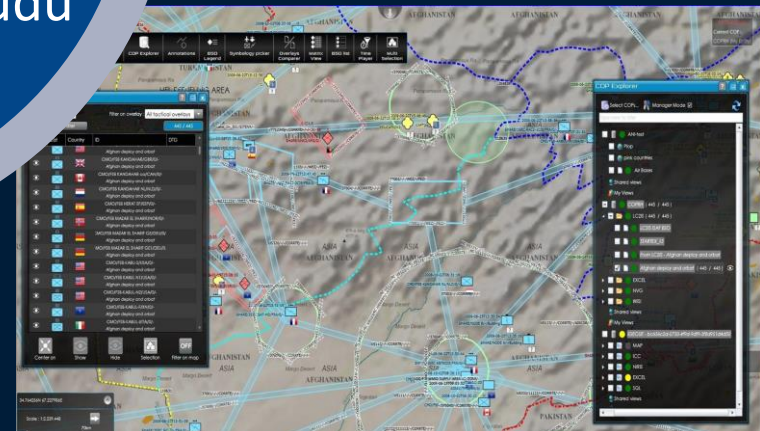


Act / Toimi

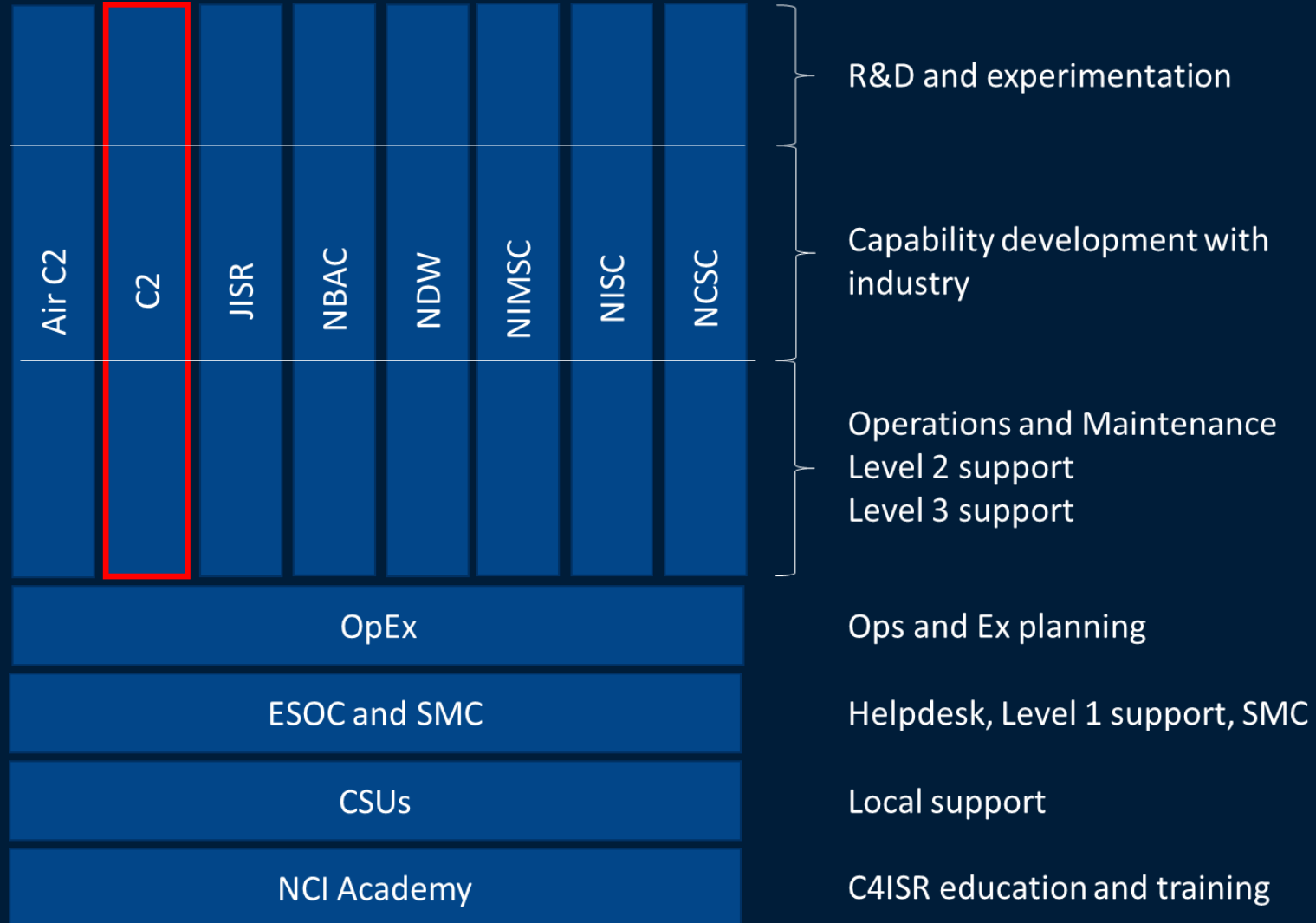
Observe /
Havaitse

Decide /
Päätä

Orientate /
Suuntaudu



Miten C2C sijoittuu NCI A: ssa?



Keskeiset C2C:n palvelualueet

- Land C2
- Maritime C2
- Joint Targeting
- Special Ops C2
- Nuclear C2
- CBRN

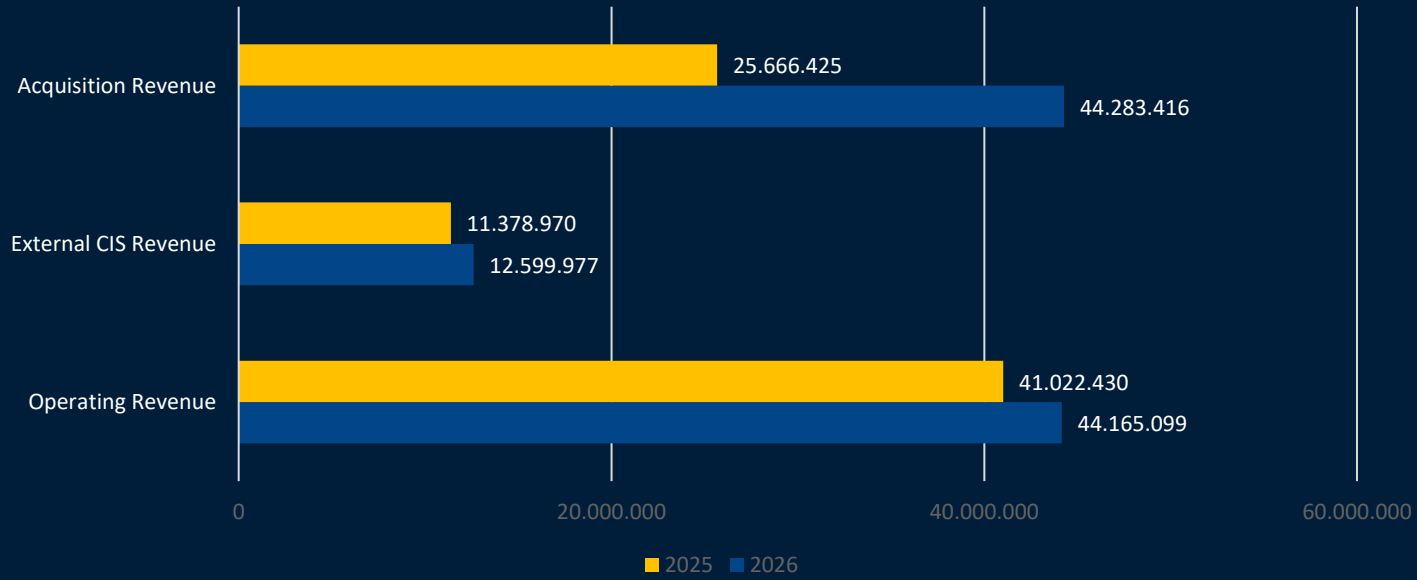
- Application Support
- Exercise support
- Operations support
- Collective training and exercises



- Operations Planning
- Logistics
- Medical
- Shared Early Warning
- Situational awareness
- Advisory Network

- Tactical Collaboration
- Networked C2 Services
- Military messaging
- C2 Standards and Interoperability

Command and Control Revenue profile



C2C:lla aktiivinen €125M+ hankintaportfolio

Interoperability/Messaging

Enablement & Logistics Services (LOG/MED/MilEng)

Joint/Land/Maritime/Ops/Nuclear C2

Situational Awareness

Strategy/Support to Operations/Nations

Training/Exercises/Modeling&Simulation

Merkittäviä uusia C2-kyvykkyyksiä

- | **Land C2** – Sitaware HQ (Tanska)
- | **Targeting** – Project Artemis
- | **Maritime C2** – MCCIS uplift (UK) ja Project Proteus (Norja)
- | **NATO COP** – Thales (Ranska)
- | **Operational Planning** – FCC (Espanja)
- | **Logistics** – ELS ja REST
- | **Nuclear C2**
- | **Military Messaging** – Thales (Norja)
- | **Education, Training & Exercise Evaluation**



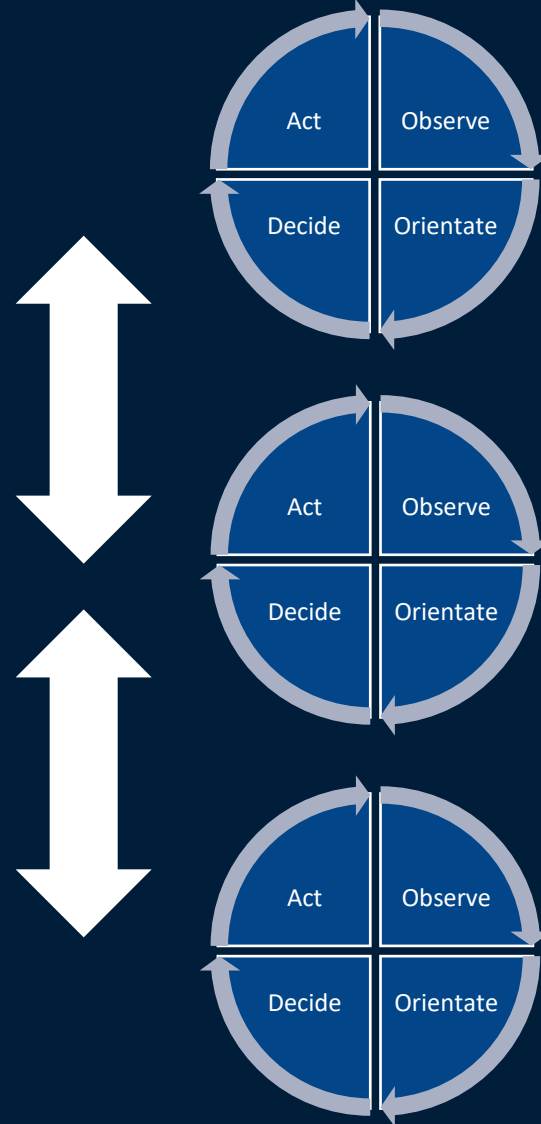
Palantir Maven Smart System (MSS)

- | NATOon next-gen AI-kyvykkyys
- | Integroi C4ISR dataa NATOon komentorakenteen yli
- | Parannettu tiedustelutiedon fuusiointi, maalinosoitus, taistelutilannekuvan muodostaminen ja suunnittelu sekä nopeutettu päätöksenteko.
- | Vaatimusmäärittelystä (lokakuu 2024) sopimukseen (maaliskuu 2025) alle kuudessa kuukaudessa.



Yhteensopivuus NATOssa

yhteensopivuus



Strateginen - SHAPE

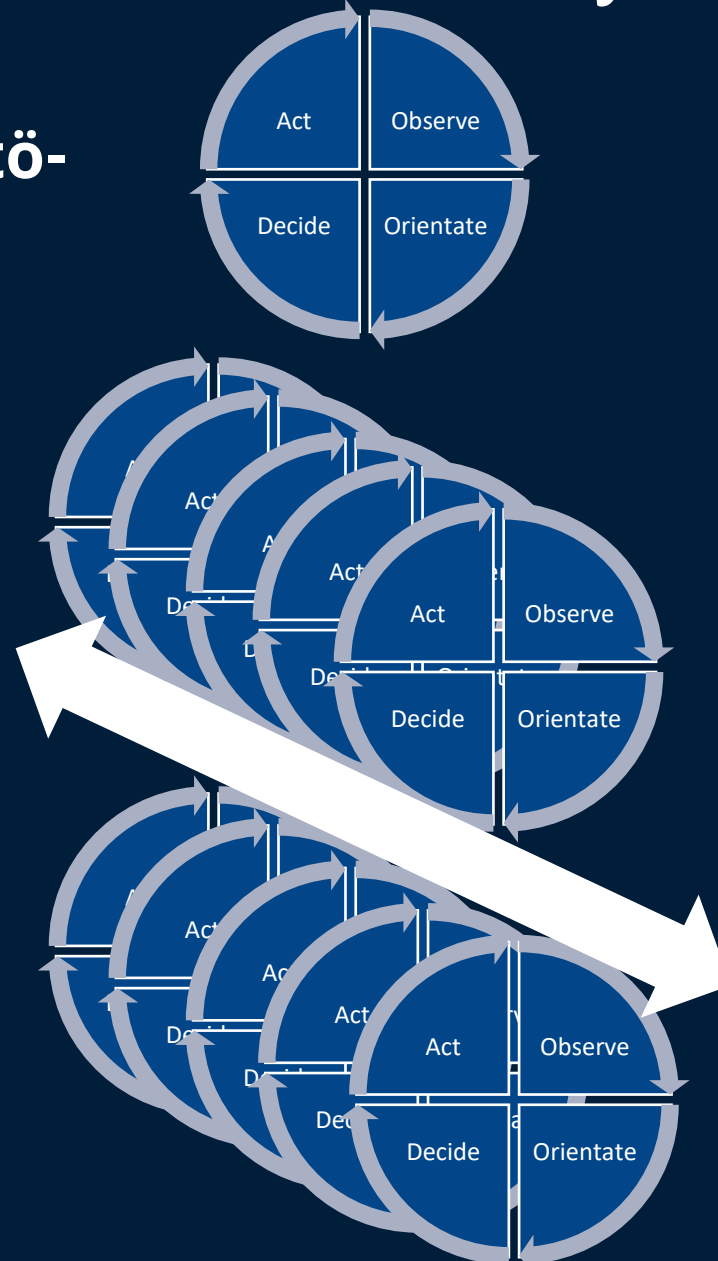
Operationaalinen - JFCt

**Taktinen - *esim.* prikaati,
erikoisjoukkojen yksikkö,
laivue**

Yhteensopivuus toimintaympäristöjen yli

monitoimintaympäristö-
operaatiot

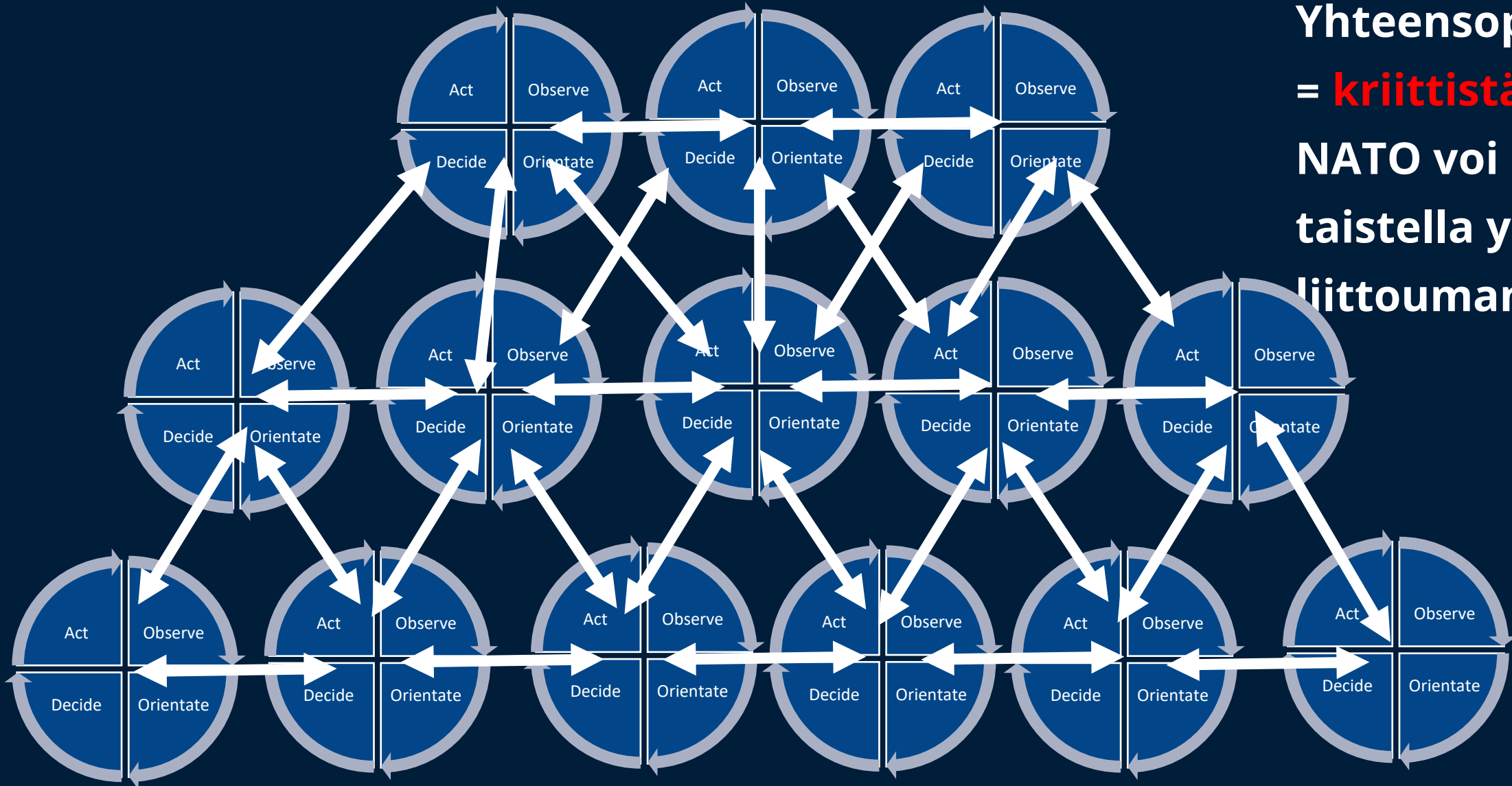
maa
meri
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avaruus
siviili



Unclassified
Restricted
NATO Secret
Mission Secret

Yhteensopivuus NATO:n ja 32 jäsenvaltion välillä

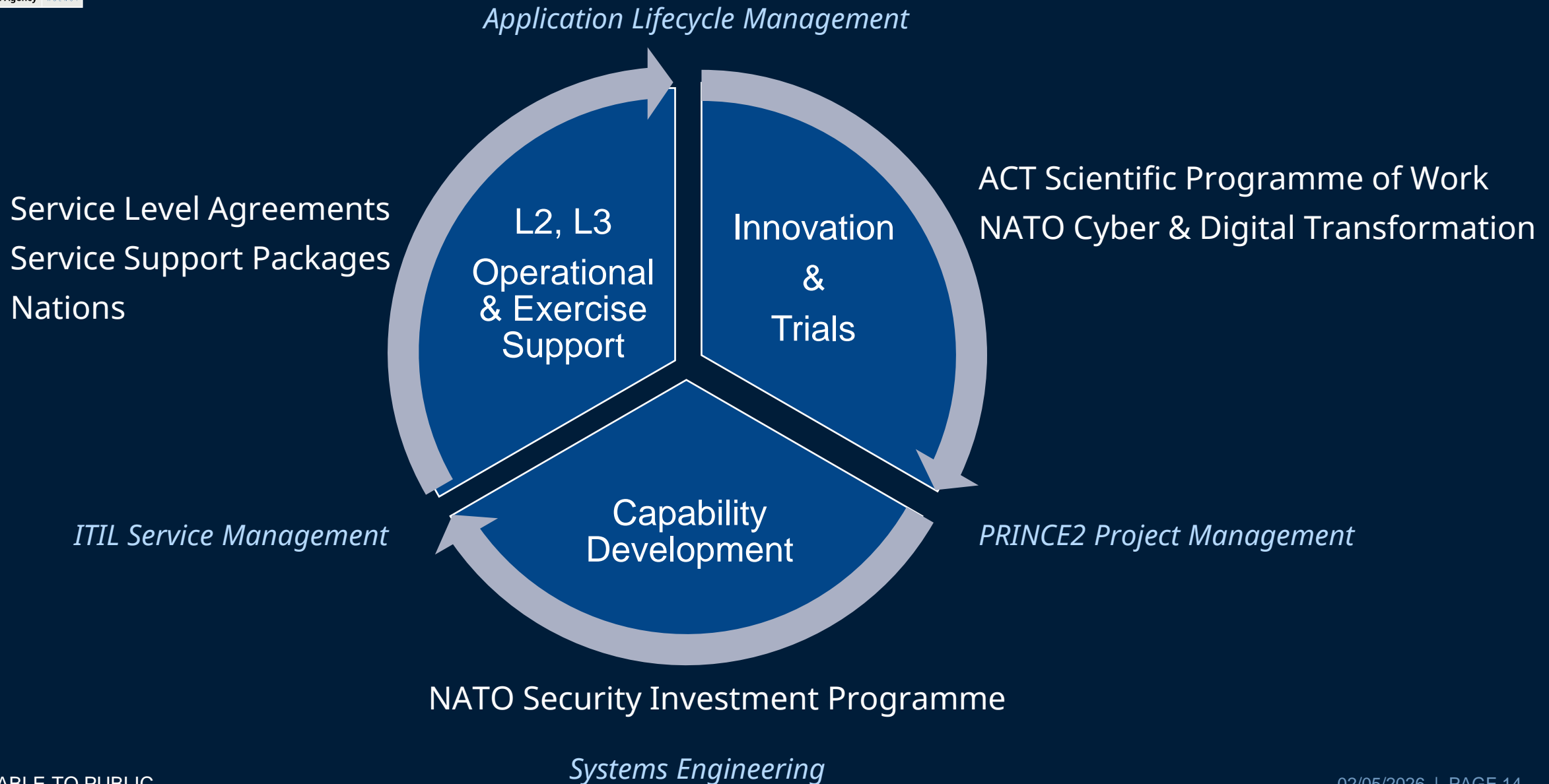
Yhteensopivuus
= **kriittistä**, jotta
NATO voi
taistella yhtenä
liittoumana



Miten tämä saavutetaan?

- | Hyvin määritellyt tiedonvaihtoformaatit
 - Taktiset datalinkit
 - NATO STANAGit (standardisaatiosopimukset)
 - Tietomallit
- | Datakeskeiset konseptit – ontologiat, merkinnät, metatiedot, datajärvet...
- | Tietoturvadiodit ja yhdyskäytävät
- | Perusteellinen testaus
 - Integraatiotestaus, kokeilut, pilotit, harjoitukset

Tuemme NATO C2:n koko elinkaarta

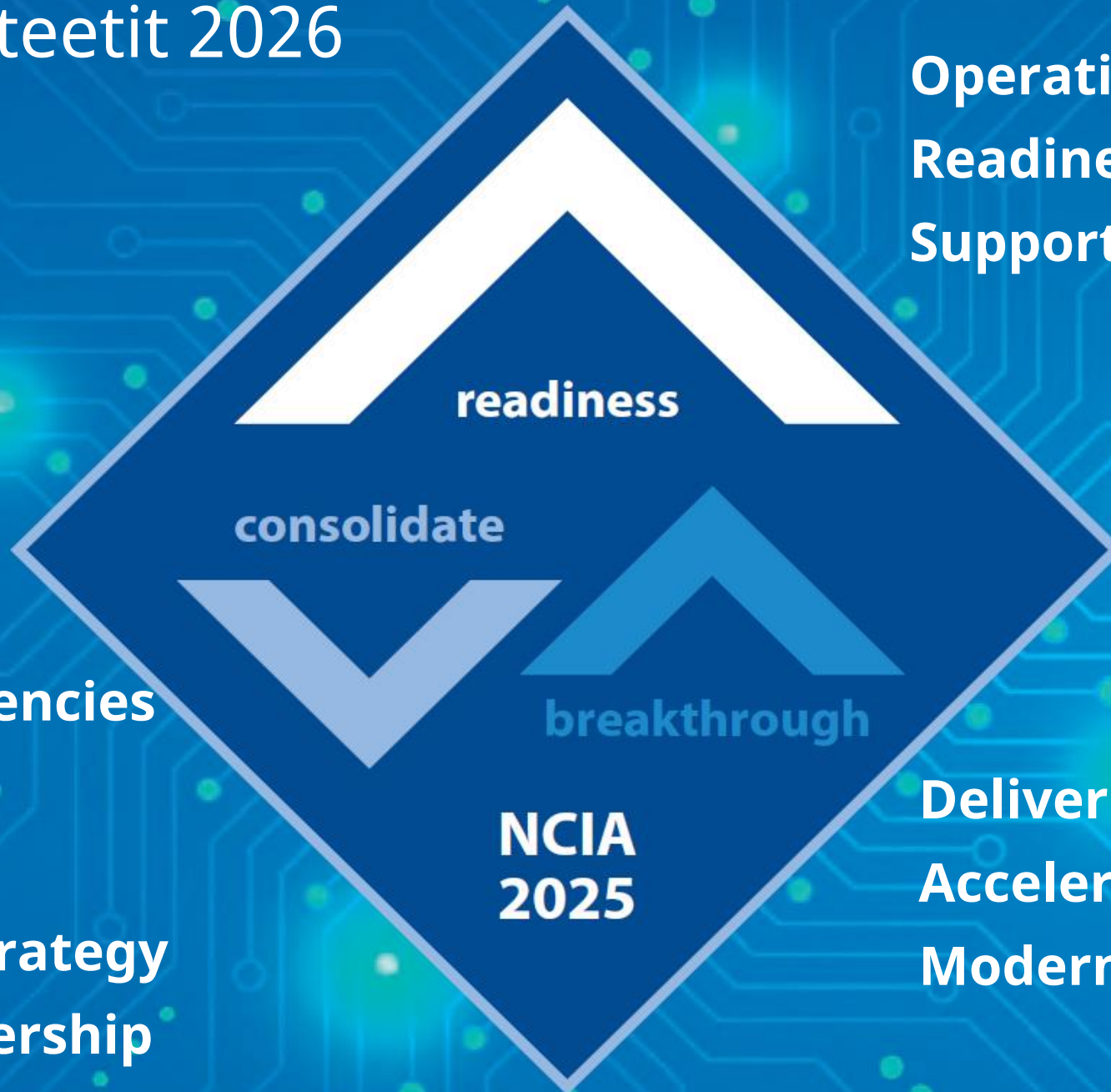


Keskeiset muutosajurit NATOlle ja NCIAlle

- | **Geopoliittinen tilanne** on muuttunut, ja NATO sen mukana
- | **Operationaalinen kysyntä** on ennennäkemätöntä (ja kasvaa voimakkaasti)
- | **Teknologia kehittyy** valtavan nopeasti teollisuuden toimijoiden ohjaamana
- | Kohdennettu uusien **kyvykkyyksien toimittaminen, resilienssi, joustavuus ja ketteryys** avainasemassa

NCIA's priorities 2026

Operations and Exercises
Readiness for conflict
Support to Ukraine



Internal efficiencies
Outsourcing
Job families
Technology strategy
Catalytic leadership

Delivering innovation
Accelerating project delivery
Modernising NATO IT

Liiketoiminta ja yhteistyö NCIAn kanssa: 5 askelta

2. Rekisteröidy NCIAn NEO- e-hankinta-alustalle



1. Katso Liiketoiminta- mahdollisuudet



3. Hanki kelpoisuusilmoitus Declaration of Eligibility (DoE)

- | Yksi DoE for kaikille BOA – mahdollisuuksille (Basic Ordering Agreement)
- | Yksi per kilpailutus IFB- mahdollisuuksille (Invitation for Bids)

4. Valmistele kilpailukykyinen tarjous

- | Osallistu hankintaa edeltävään markkinavuoropuheluun NCIAn kanssa
- | Lue ohjeistukset tarkasti ja tarvittaessa pyydä tarkennuksia ennen määräaikaa
- | Vältä määräyksiin tehtävien poikkeusten lisäämistä tai NCIAn oikeuksien rajoittamista

5. Opettele prosessit ja pysy ajan tasalla

- | Tunne Suomen kansallinen edustusto NATOssa sekä NATEX (Harri Roivainen, NCI.A.NAE@gov.fi / +32 479 852 015) ...kysymykset, mahdollisuudet, vuoropuhelu
- | Pyydä palautetta kun mahdollista → hyödynnä opit
- | Osallistu NATO:n yritystapahtumiin

Yhteys: industryrelations@ncia.nato.int

| Hankintaa edeltava markkinavuoropuhelu

- a) Kehittää vuorovaikutteisen palautemekanismin teollisuuden kanssa kohdennetuissa hankkeissa
- b) Lisätä tietoisuutta NCIA:n tarpeista ja teollisuuden kyvykkyyksistä
- c) Nopeuttaa markkinoillepääsyä ja vähentää lisäselvityspyyntöjä

| Työn alla: **esikilpailullinen markkinavuoropuhelu**

Keskustelemme hankinnan kanssa tavoista vapauttaa resurssejamme muuhun työhön FAS (Functional Application Services) -järjestelmien toisen tason operatiivisen teknisen tuen ulkoistamisella. Suunnittelemme ennakkohankintatilaisuutta aiheesta 2026 aikana. Seuraa viestintaamme!

SAVE THE DATE

NATO Edge 26

NATO
EDGE 26

#NATOEDGE

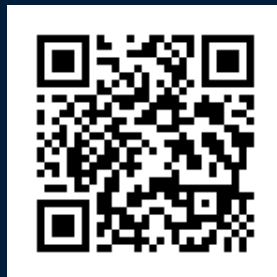


| **17-19.11.2026**, İzmir, Turkki

| NATO:n merkittävien liiketoiminta- ja teknologia-konferenssi: yli 2000 johtajaa ja asiantuntijaa NCIA:sta ja Nato-organisaatiosta, teollisuudesta ja akateemisesta maailmasta sekä kansallisista hallinnoista ja asevoimista

Liity postituslistalle:

<https://www.natoedge.nato.int/>



| Miljardin euron arvosta liiketoimintamahdollisuuksia hankintaportfoliossamme, sekä tiekarttoja ja verkostoitumismahdollisuuksia kyvykkyyksien toimittamiseen, kumppanuuksiin ja valmiuteen.

| **Osallistu, aseta näytteille, verkostoidu ja tutustu tuleviin liiketoimintamahdollisuuksiin NATO Edgessä.**

Kysymykset ja keskustelunavaukset

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harri.paananen@ncia.nato.int / + 31 6 27 96 11 42



Enablement Support Services Program

Showcasing the \$450M Sustainment project

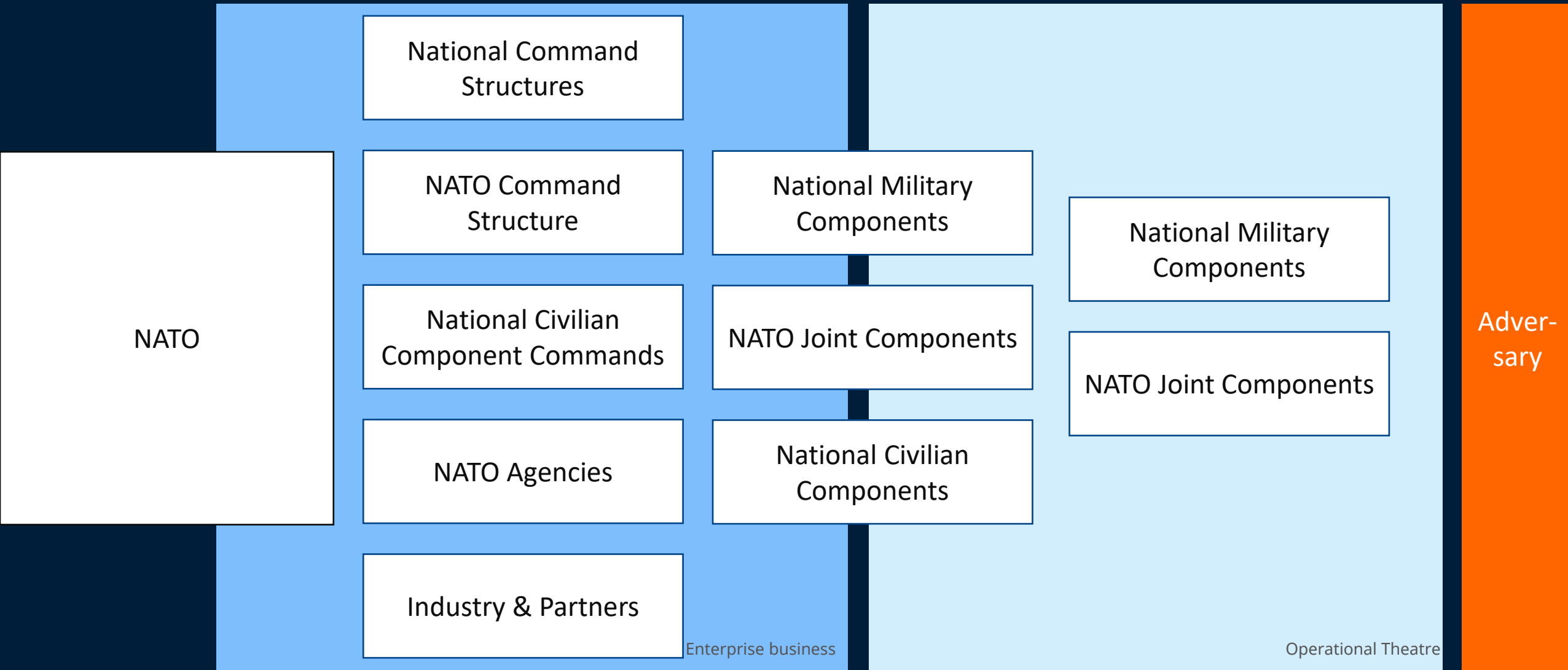
Markus Sandelin, Command & Control Centre (C2C)

RELEASABLE TO PUBLIC

Understanding the big picture

- | NATO is a large entity. 32 nations with different levels of readiness, approaches to warfighting, unit structures, data capabilities and distances from the battlefield
- | The Enablement Support Services (ESS) program integrates and builds the digital backbone for three focus areas (FAs): Logistics, Medical and Military Engineering, a massive challenge
- | This is a short brief on the technical and architectural approach to ESS, connecting and partly leading NATO's digital transformation initiatives

The top-level organisational elements ESS POV



Problem statement: Data sources and types

- | For the project, it is relevant to identify the types of environments/security domains, formats and transmission mechanisms our data acts on
 - | Intra-NATO data vs. intra-national data vs. NATO-nation data sharing
 - | Point-to-point vs. push/pull vs. federated and federating environments,
 - | enterprise vs. operational vs. military-civilian sharing.
 - | All of these have classifications, and related metadata (data describing data)
 - | On top of this we have structured data (like APP-11 messages, future LOGC2IX) vs. unstructured data (such as Sharepoint or emails) – produced by humans or machines
- | ESS leverages data as the fundamental resource for interoperability

Data from a time perspective

- | On top of the different sources and types, we have to consider the normal battle rhythm and doctrine requirements
- | This is critical to ensure that we are able to scale our data operations and provide resiliency when necessary, and use as-similar-as-possible training, modeling and simulation efforts with dummy data and infrastructure
 - | Peacetime, Crisis and Conflict
 - | Planning, Exercising and Operating
 - | Training, and Modeling and Simulation
 - | Permanent vs. time-relevant data

Data infrastructures from ESS POV

- | Since Support and Enablement is a continuous process, working a lot with the civilian component and global industry, we need to consider both enterprise, operational and open source (public) environments as the basis for our data acquisition
- | ESS will greatly benefit from identifying and leveraging existing solutions and processes as much as possible, e.g.
 - | Leveraging the APP-5 process to produce IERs, and the IESes produced (MTF/API)
 - | Being present in the IER community, FMN community, AFS/veVA progress to properly inject program requirements with proper emphasis

Problem statement in terms of architecture

- | The purpose of ESS is to enable our enablement domains to interoperate by sharing and delivering data
- | Doing this, ESS will consist of over 40 capabilities – each with their own projects and phases, and of course all the supporting elements such as the ESS Platform and the ESS Foundation
- | ESS needs to approach this multi-functional area program as an ecosystem instead of individual projects, otherwise it will either fail or go over budget

Service Tier Terminology

To avoid confusion, ESS distinguishes three service tiers:

ESS Platform Services

Infrastructure layer providing the hosting environment, network connectivity, security perimeter, and compute resources.

- Hosting & Compute
- Network Services
- Security Perimeter
- Cloud Readiness

ESS Foundation Services

Core shared services enabling integration, authentication, messaging, and data management across all capabilities.

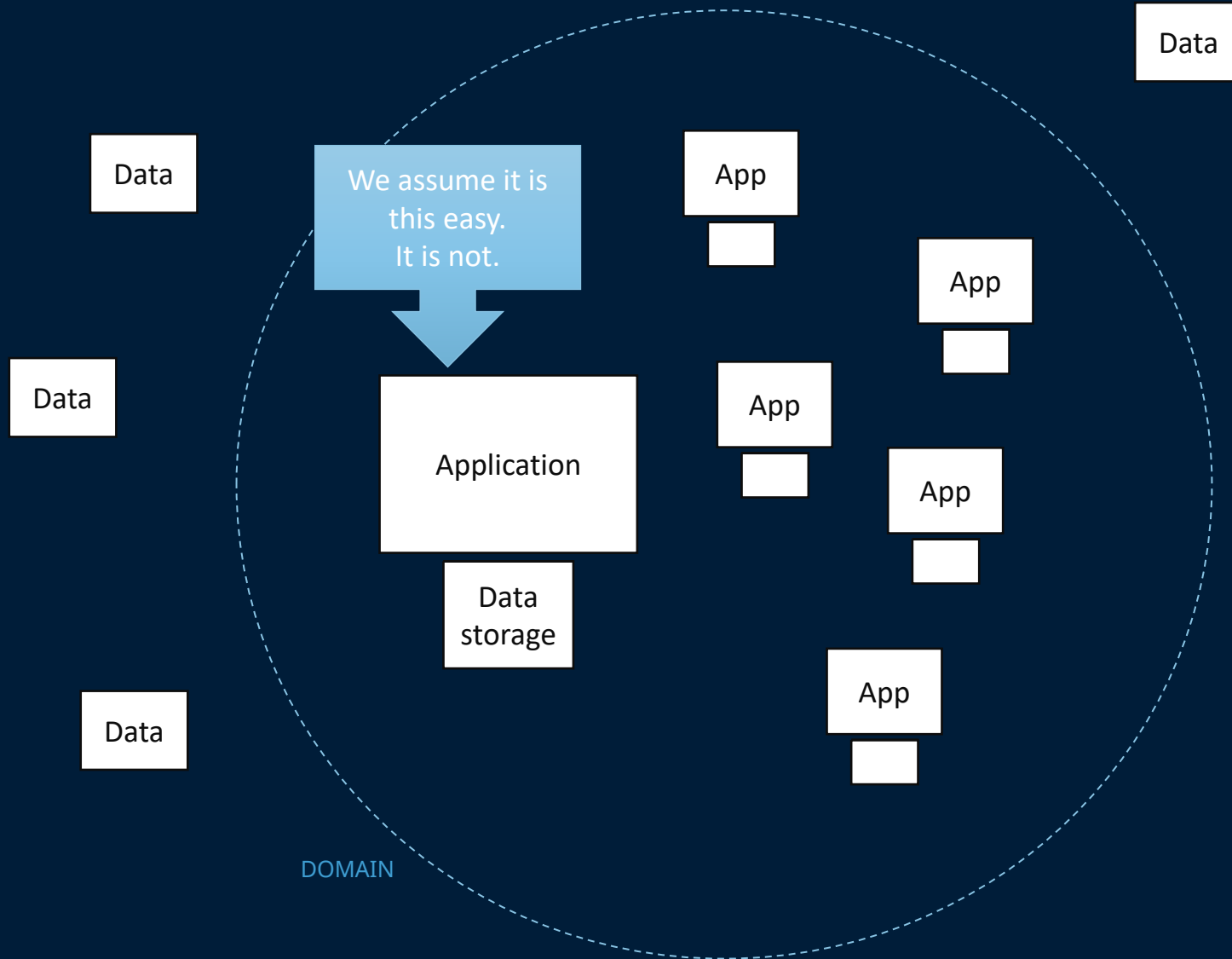
- Authentication Layer
- Service Bus
- Data Layer & MDM
- API Gateway

ESS Functional Services

Domain-specific capabilities serving the Communities of Interest (CoI): Logistics, Medical, and Military Engineering.

- LOG Capabilities
- MED Capabilities
- MILENG Capabilities
- Cross-CoI Services

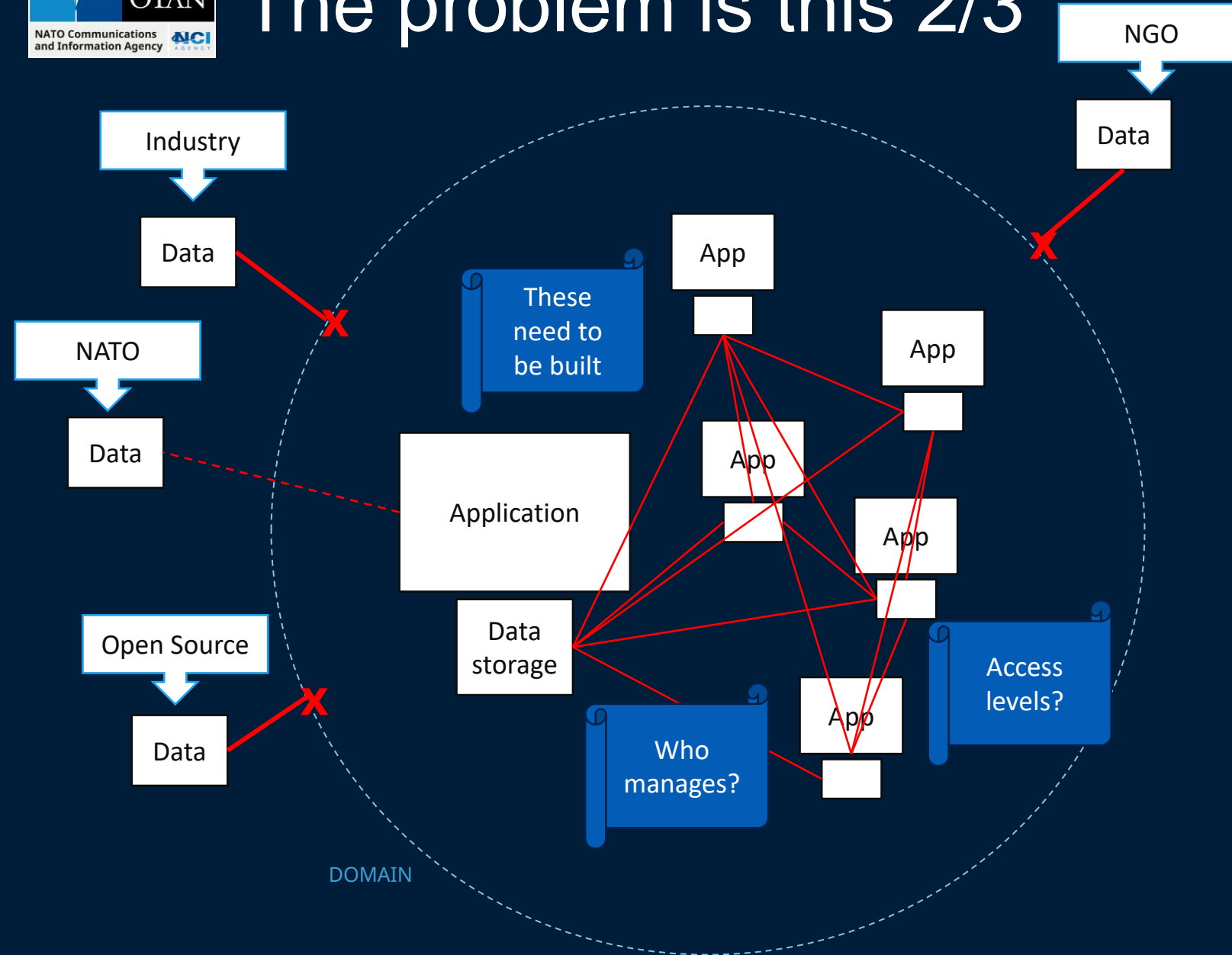
The problem is this 1/3



Currently, we are building independent capabilities – usually applications with some kind of data storage.

We want to interoperate, requiring that data to move inside a domain, and between other domains in a controlled way.

The problem is this 2/3

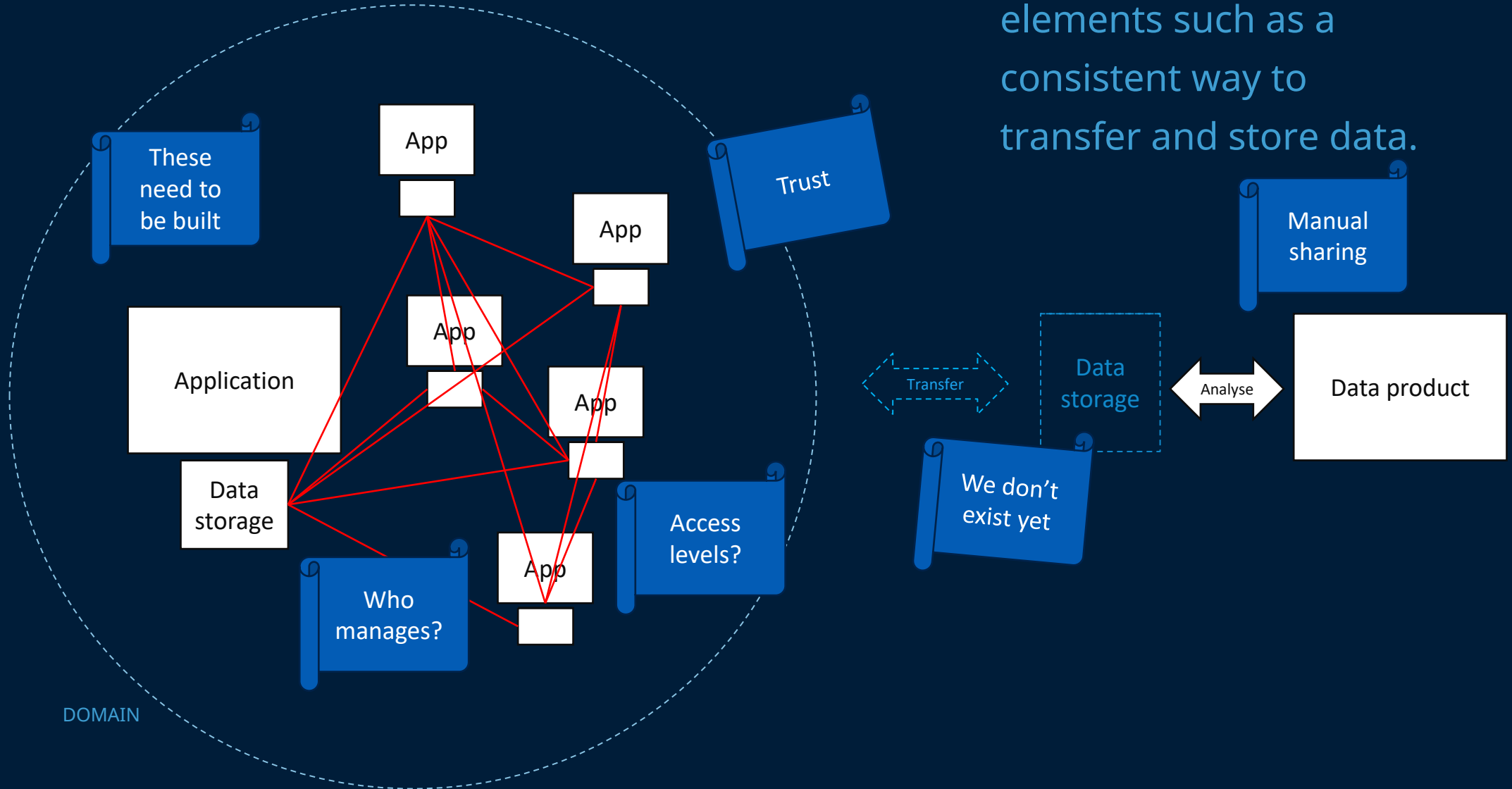


The current way is to connect each application with each other, just like building a road whenever you want to drive your car somewhere.

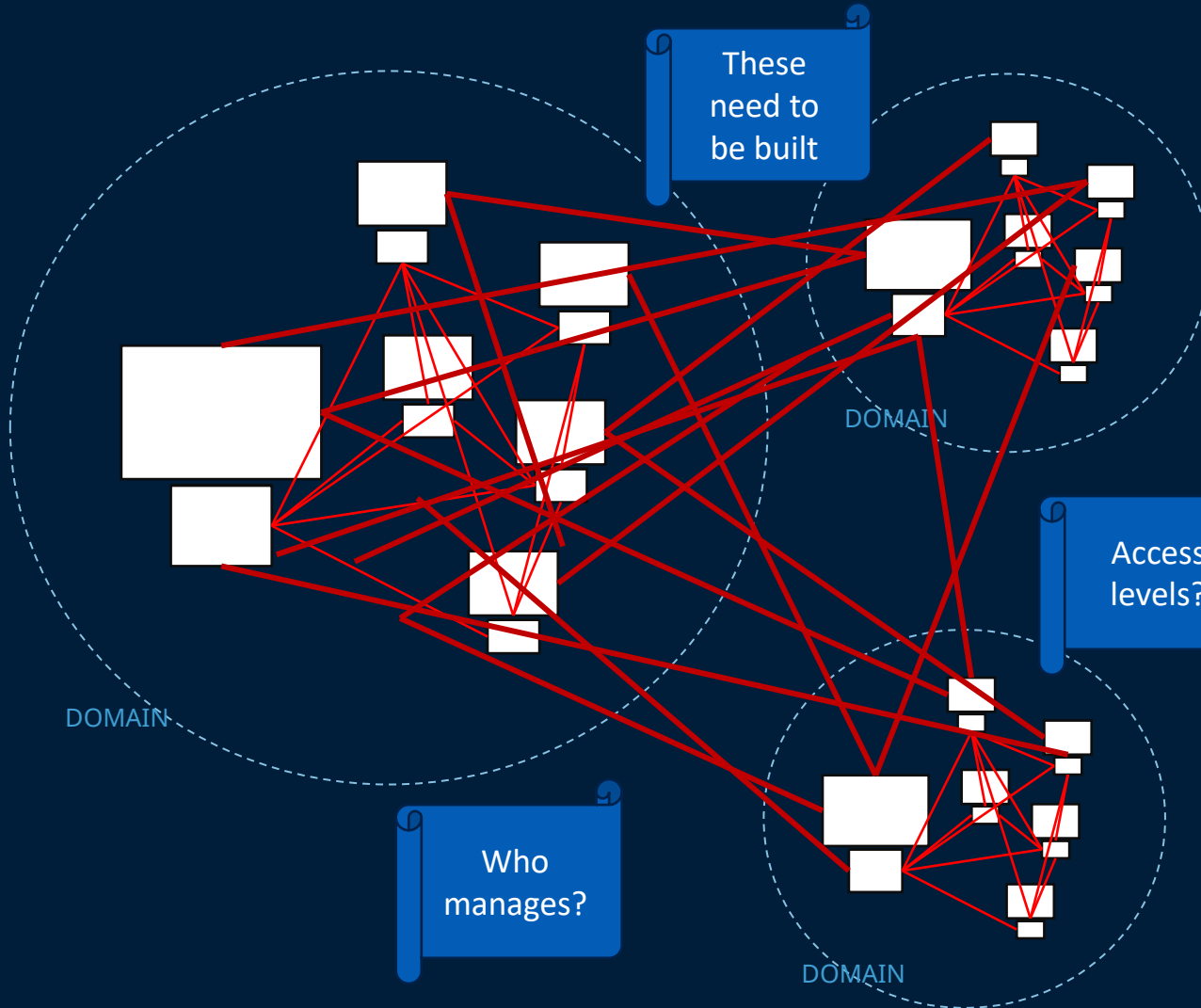
This creates amazing complexity, and does not really solve any problems.

The problem is this 3/3

We are also need to improve other infrastructure-like elements such as a consistent way to transfer and store data.



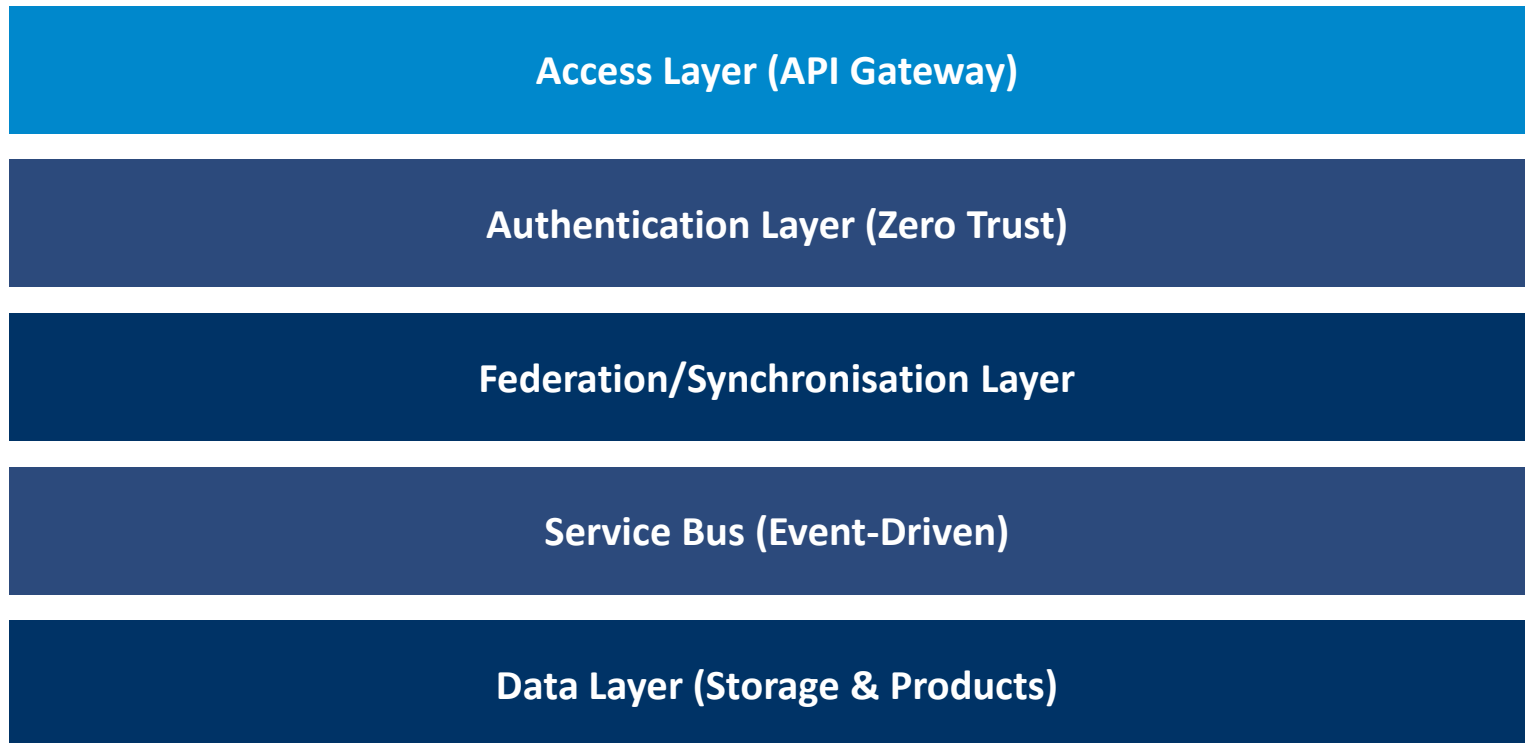
The problem scales with security/functional domains



This point to point architecture leads to several issues during building, overcomplicates our efforts and if a single system is replaced, it will not only break anything, all new things need to be rebuilt custom – which is slow and expensive.

The Solution: ESS Platform

By having a common way to authenticate users (human/machine), store data within the domain, and connect via APIs, we enable automation and structured data collection.



Adding new capabilities is easy when the foundation exists!

Architectural Principles

The ESS Platform architecture is built on these foundational principles:

1. Vendor Flexibility

- | Each capability can have its own data store. ESS does not mandate a single database, allowing vendor/service provider flexibility.

2. Cloud-Readiness

- | All functional services must be cloud-ready for NATO CLOUD initiatives' uplift when available.

3. Standards-Based

- | Integration via established standards (OAuth 2.1, RESTful APIs, STANAG 5663).

4. Decoupled Integration

- | Capabilities integrate via API contracts, not direct database connections or source code sharing.

5. Event-Driven

- | Service Bus enables publish/subscribe patterns for loose coupling between capabilities.

6. Master Data Management

- | Single source of truth for authoritative data with clear ownership.

Service Tier Model

The ESS Platform follows a layered service model:

Functional Services (CoI)

LOG | MED | MILENG Capabilities

Foundation Services

Authentication | Service Bus | Data Layer | API Gateway

Platform Services (Infrastructure)

Hosting | Network | Security | Cloud Readiness

Each layer depends on and is enabled by the layers below it.

NCIA has amazing opportunities for industry

- | ESS is just one example of the large portfolio of projects and programs, which can be participated individually or as a coalition of bidders
- | All the NATO specific items can be learned, and lessons learned with the Finnish Defense Forces will greatly help understand the principles
- | It is important to participate in exercises and RFIs to share information about existing capabilities and products, especially dual-use COTS solutions that follow modern software principles



Thank you!

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