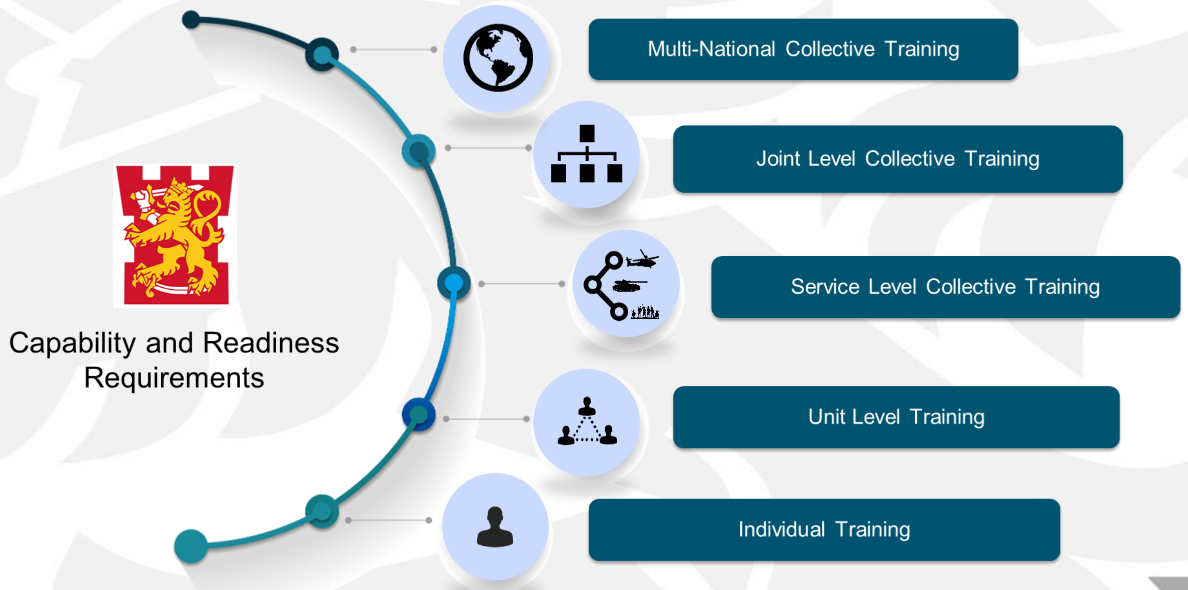
Pääesikunta

KYKY

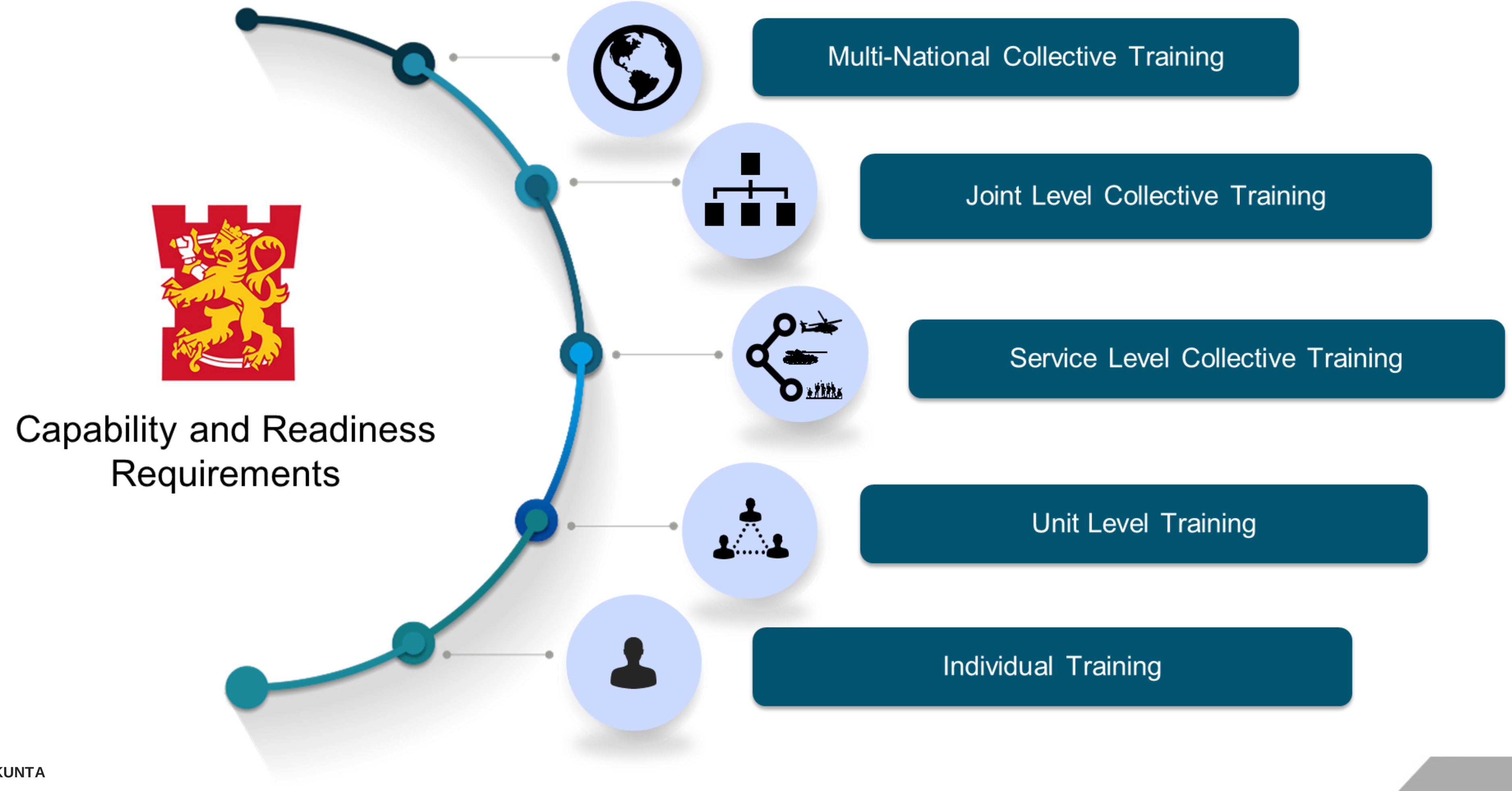
Common Synthetic Environment

Harri Pietilä / J7 Defence Command

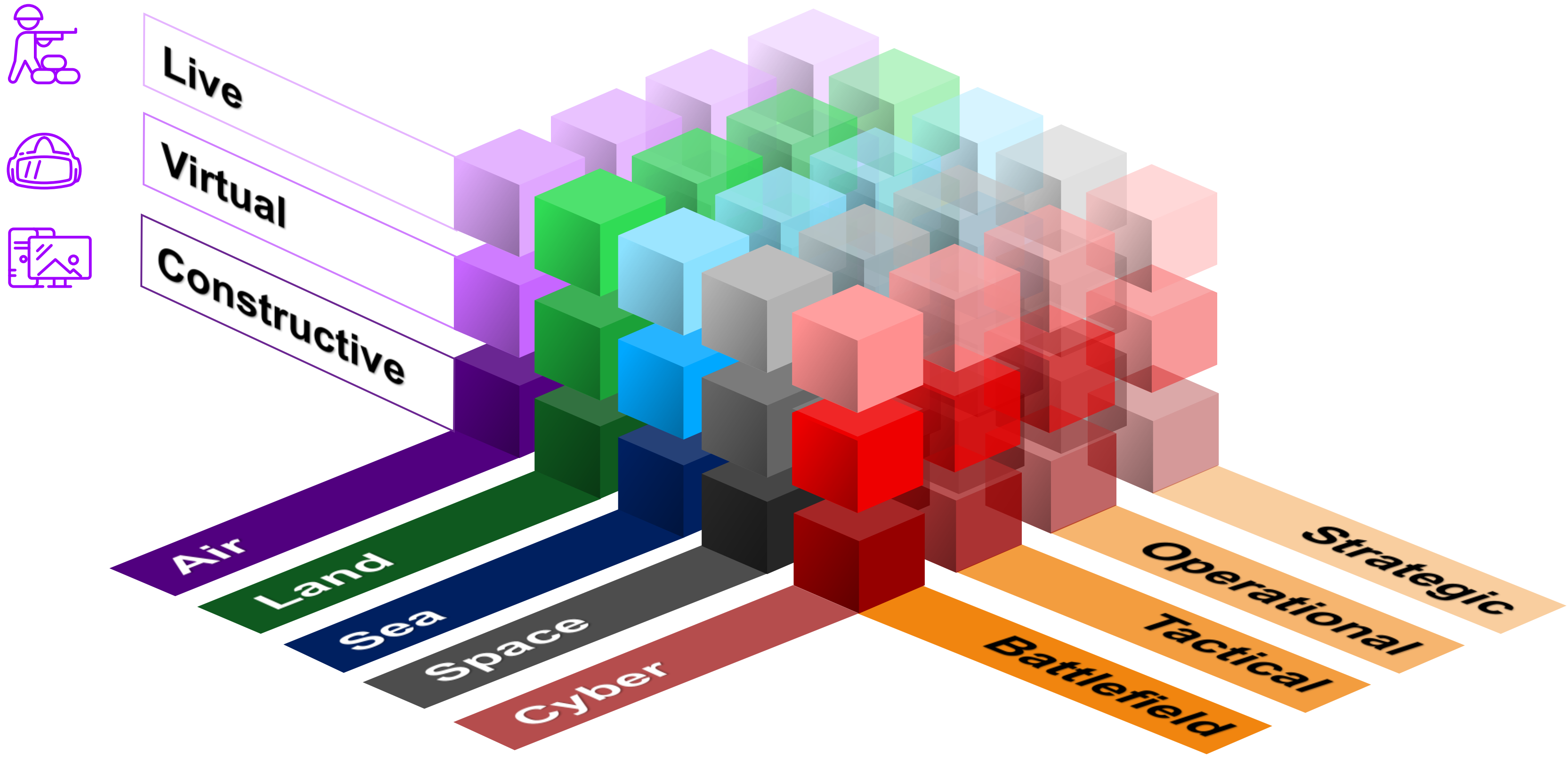
Jaakko Hyvärinen / Accenture



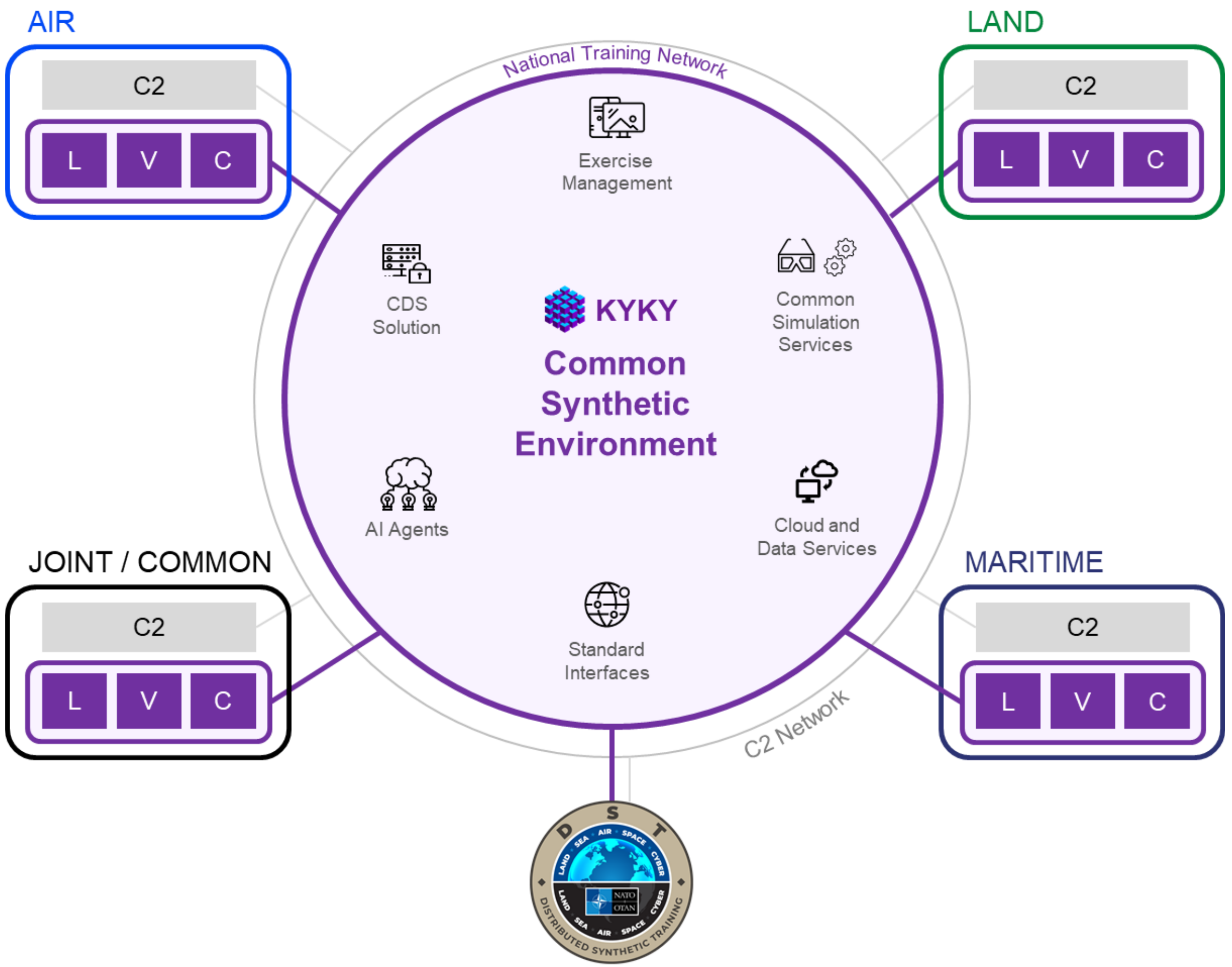
Training Is A Cornerstone of Military Strength



Simulation Enabled Multi-Domain Environment



FDF Common Synthetic Environment Vision



KYKY Program Operating Model

KYKY

FDF Stakeholder Ecosystem

- Instructors
- End-Users
- Operative Experts
- Programs
- HQs
- Allied Partners

accenture

Technology Agnostic Integrator and Subject Matter Expert

Technology Ecosystem

masa, MAK Technologies, Bohemia Interactive Simulations, SAAB, Stormwind Simulator, 3D Talo, eSim Games, BSI

Navielektro, INSTA, SYSTEMATIC, Teleplan

Pitch, TerraSim, NATO OTAN, Varjo, Microsoft, calytrix, unity, Epic Games, NVIDIA NIM

Evaluations

Cervus, JTLS GO, Palantir, blackshark.ai, NVIDIA Omniverse Enterprise, HADEAN, hymots®, Vantage

Identified use-cases

Land

2.1
2.2
2.3
2.7
2.8
2.9
2.10
2.12
2.15
2.16
2.17
2.19
2.20
2.21
2.22
2.23
2.24
2.25
2.32
2.33
3.4
3.19

22 pcs

Cyber

4.1

1 pcs

Air

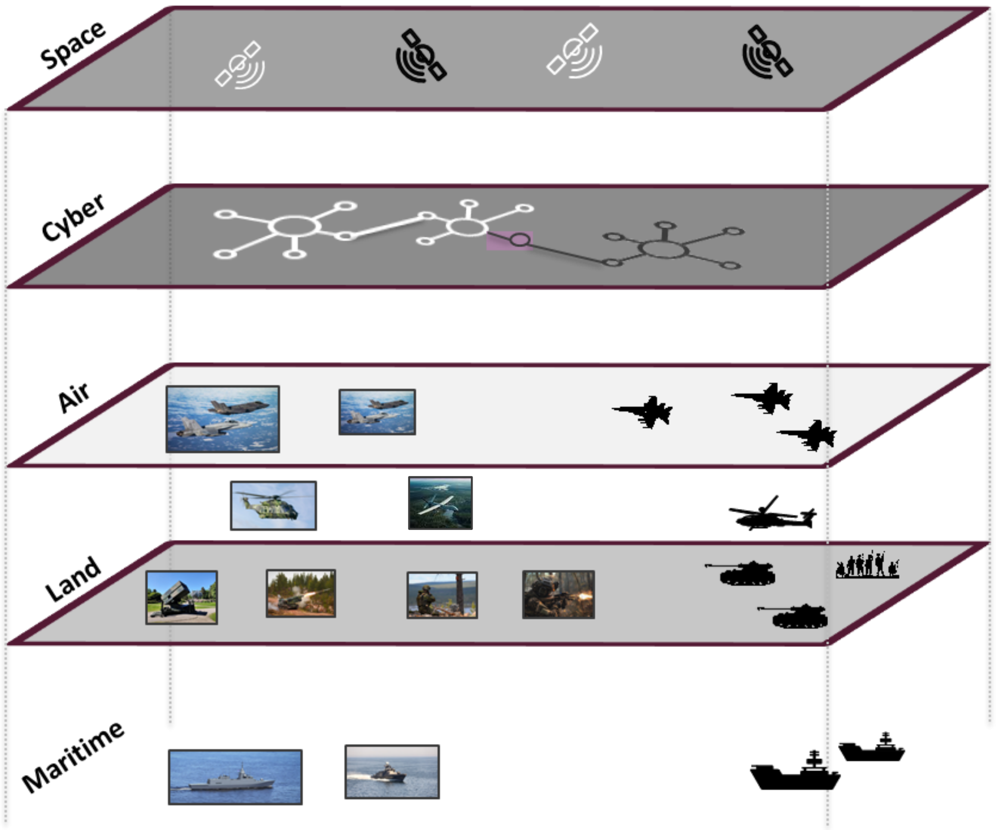
3.13
3.21

2 pcs

Maritime

1.1
1.2
1.3
1.4
1.8

5 pcs



Space Cyber

4.18

1 pcs

Land, Maritime

1.5
1.6

2 pcs

Air, Land

2.18
2.31
3.2
3.14
3.15
3.16
3.17
3.18
3.20

9 pcs

Air, Land, Maritime

2.4
2.5
2.6
2.11
2.26
2.27
2.28
2.29
2.30
3.1
3.3
3.6
3.8
3.9
3.10
4.1
4.14
4.15
4.25

19 pcs

MDO

1.7
2.13
2.14
3.5
3.11
3.12
4.3
4.4
4.5
4.6
4.7
4.8
4.9
4.10
4.11
4.12
4.13
4.16
4.17
4.19
4.20
4.21
4.22
4.23
4.24

25 pcs

Common Synthetic Environment Example

Common Synthetic Environment

Battalion Command Post

Battalion commander and staff, using real C2 and comms

Operational level simulation by **Constructive Simulator**

Virtual Trainer Classroom

Reconnaissance Platoon

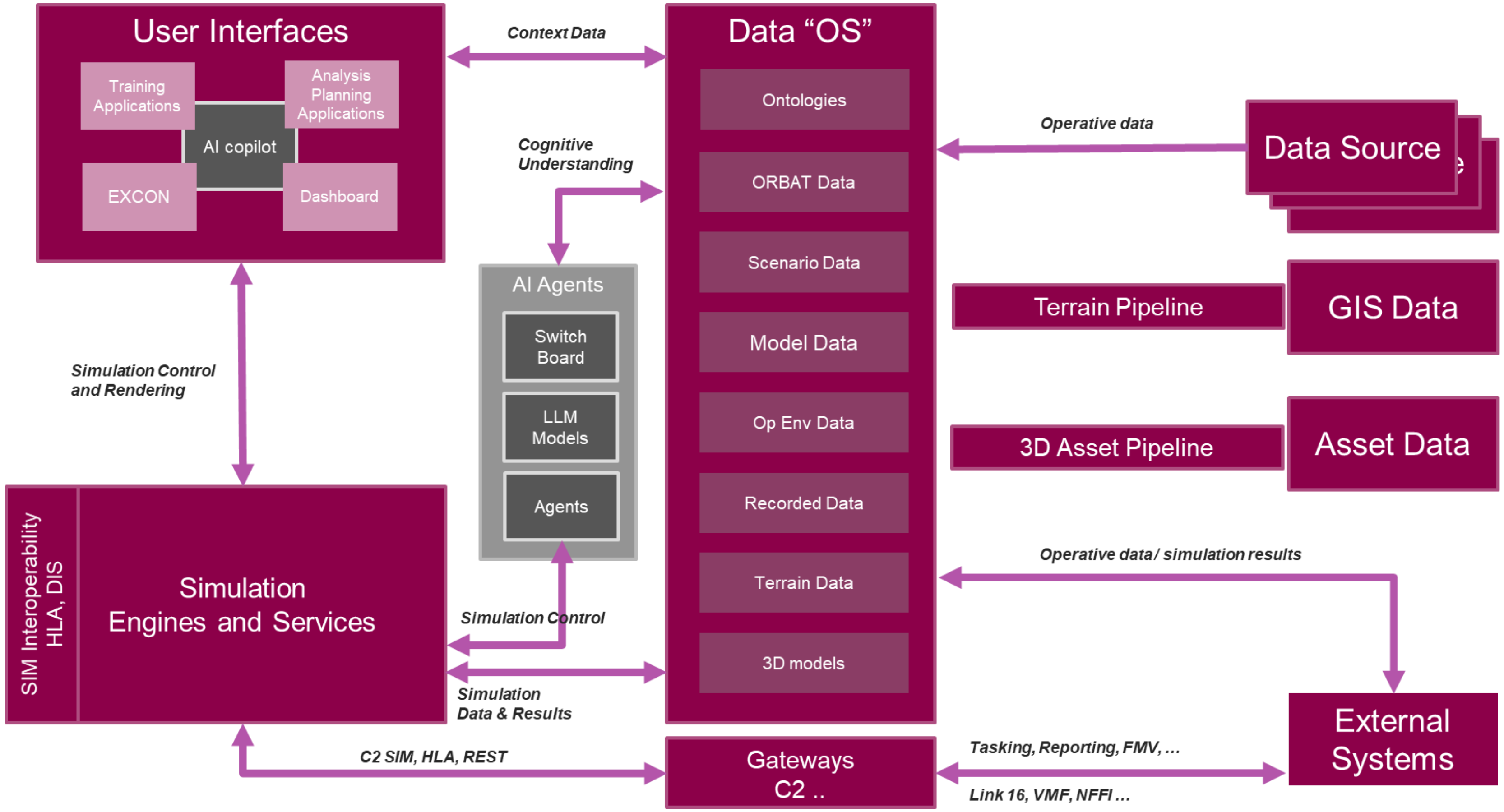
Tactical level simulation by **Virtual Simulator**

Live Environment

Infantry Company in Live Environment using **Live Simulation Equipment**

Close Air Support **Virtual Flight Simulator**

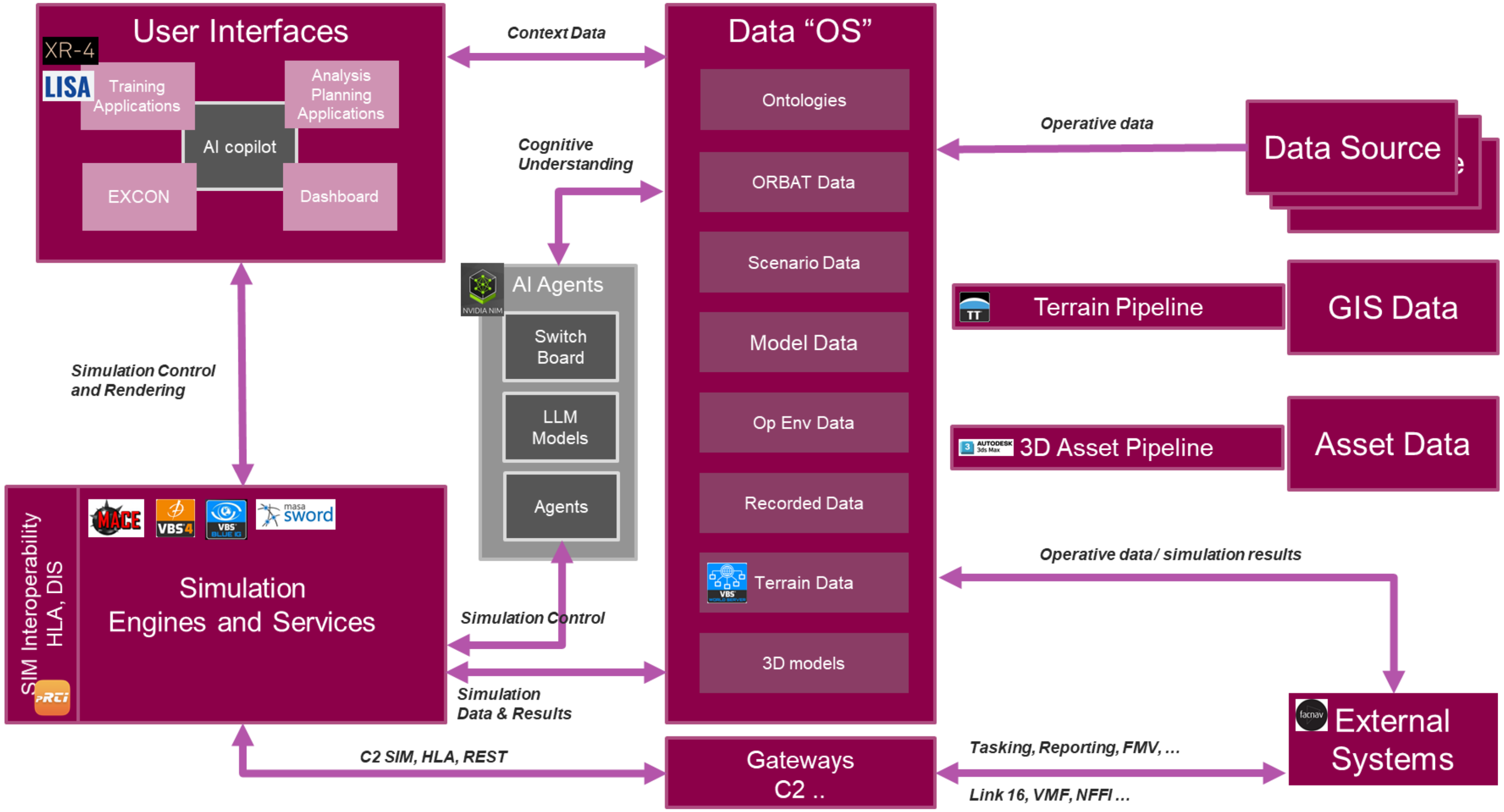
Common Synthetic Environment Building Blocks



JTAC Simulator

- FIN-LVC-CORE JTAC is a type 1, 2, 3 accredited extended reality (XR) based JTAC simulator
  - The development has been following agile methodologies, interoperability standards and ”train as you fight” philosophy.
- Simulator allows JTACs to interact with the simulation through familiar operational interfaces, such as laser designators and battle management systems.
- Setup is composed of simulation technologies such as VBS4 and MACE, which are already broadly used within the Finnish Defence Forces, making it more accessible for the end users.
- Simulator is developed in a way it can be used as a reusable building block to enable a wide range of use cases.

Demonstration Technologies



Key takeaways

- Common Synthetic Environment (CSE) meets training requirements across all levels of warfare, scaling from single-echelon activities to large-scale and combined exercises.
- CSE is an integrated system of systems that enables realistic, multi-domain (MDO) military training and decision support through **live**, **virtual**, and **constructive** simulations.
- CSE integrates seamlessly with operative command and control systems and processes. Interoperability is achieved through the use of widely adopted standards and modern security approach.
- Artificial intelligence will revolutionize how CSE is leveraged in military training and decision support.
- Common Synthetic Environment (CSE) is multi-year ecosystem development effort – that requires strong stakeholder involvement across defence organization.
- Procurements and solutions should be implemented with reusability across multiple context in mind.