



OMNISECURE 2024

Bedeutung von Cloud-Technogien für die Fähigkeitsentwicklung der Bundeswehr

22.01.2024

Oberst i.G. Dr. Bartels



BUNDESWEHR

GEFÄHRDUNG STATISCHER INFRASTRUKTUR



15 March 2022 in Russian-occupied Kherson International Airport, Chornobaivka, Ukraine,

Main CP Russian 49th Army of the Southern Military District



GEFÄHRDUNG STATISCHER INFRASTRUKTUR



<https://www.esri.com/about/newsroom/blog/ukraine-open-source-intelligence/>

Operational Relevance and Context



NATO's Eastern Flank: STRONGER DEFENCE AND DETERRENCE

40,000 TROOPS UNDER DIRECT NATO COMMAND
130 ALLIED AIRCRAFT AT HIGH ALERT
100,000 US TROOPS DEPLOYED TO EUROPE
140 ALLIED SHIPS AT SEA

Multinationale Interoperable Führungsfähigkeit ist wesentliche Forderung für NATO Force Model.

FMN-Konformität ist Mindestvoraussetzung.



AMPHIBIOUS TASK FORCE



CARRIER STRIKE GROUP

JUNE 2022 All numbers indicative



By 2030, NATO's Digital Transformation will...



...enable the Alliance to conduct **multi-domain operations**



...ensure **interoperability** across all domains



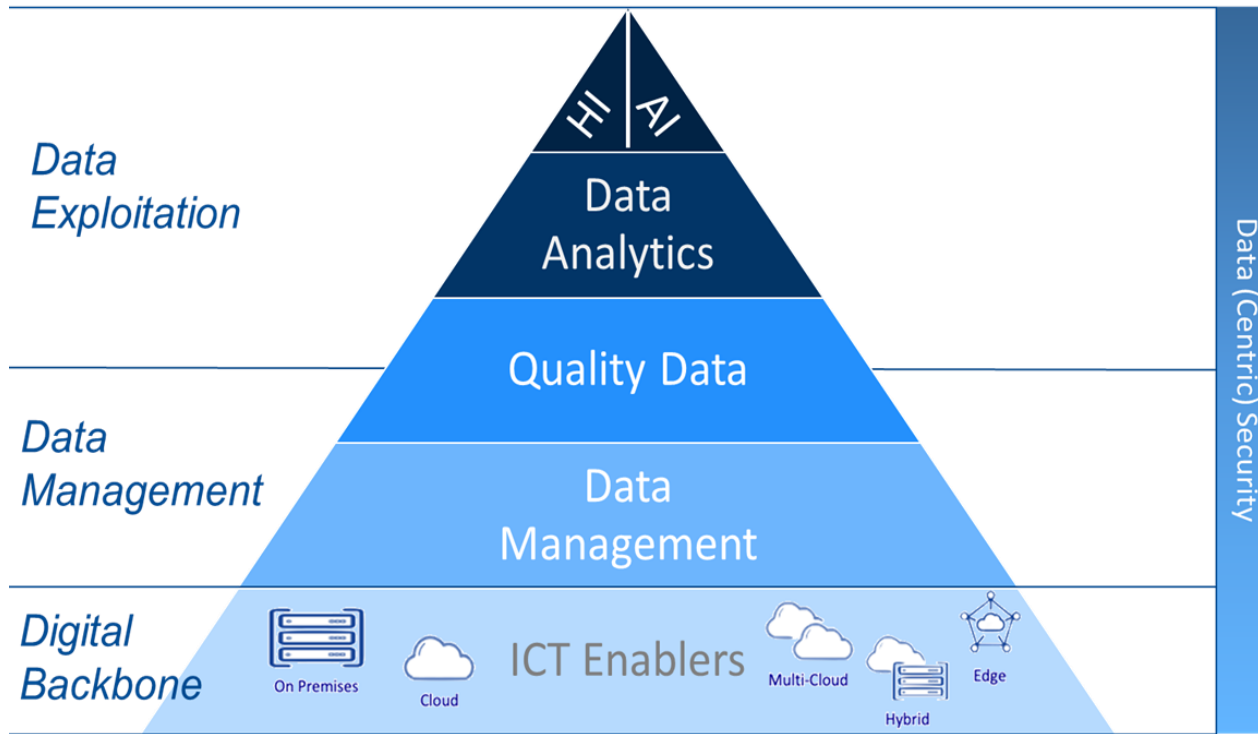
...enhance **situational awareness**



...facilitate **political consultation** and **data-driven decision-making**

Data-Driven Decision Making






assisted - autonomous



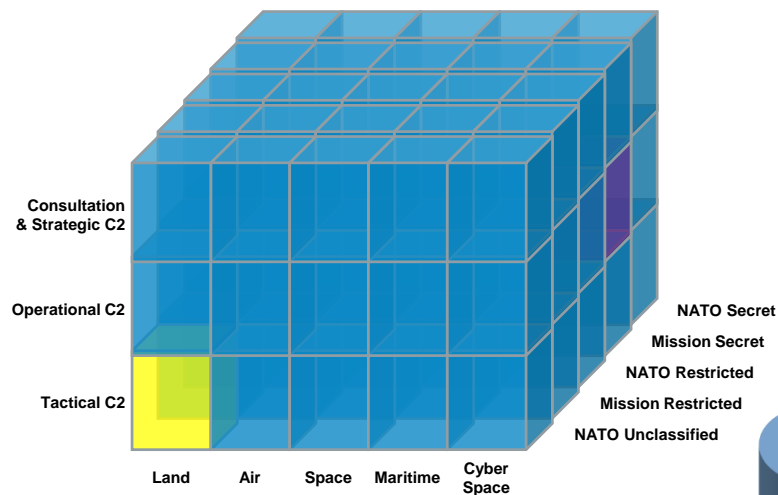
The Digital Backbone provides the Information and Communications Technology Platform hosting the Data Architecture of the Alliance.

Quelle: NATO Digital Staff (NDS)

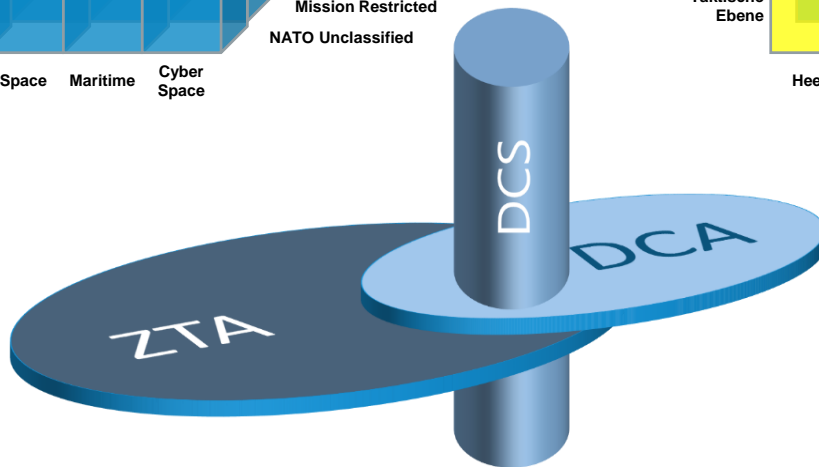
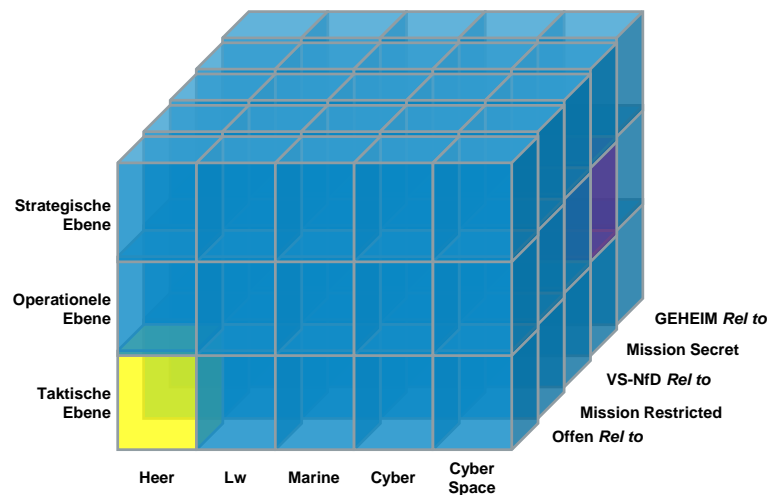
SECURITY DOMAIN UND INFORMATION DOMAIN

		Information domain 			
		 DEU	 NATO	 EU	MISSION
Security domain 	STRENG GEHEIM		COSMIC TOP SECRET	COSMIC EU SECRET	MISSION TOP SECRET
	GEHEIM		NATO SECRET	EU SECRET	MISSION SECRET
	VS-VERTRAULICH		NATO CONFIDENTIAL	EU CONFIDENTIAL	MISSION CONFIDENTIAL
	VS-NFD		NATO RESTRICTED	EU RESTRICTED	MISSION RESTRICTED
	OFFEN		NATO UNCLASSIFIED	EU UNCLASSIFIED	MISSION UNCLASSIFIED
	ÖFFENTLICH		NATO UNCLASSIFIED	EU UNCLASSIFIED	MISSION UNCLASSIFIED

NATO's Digital Backbone Architecture



Komplexität für Partnernationen



Data Centric Architecture
Data Centric Security
Zero Trust Architecture

Quelle: NATO Digital Staff (NDS)

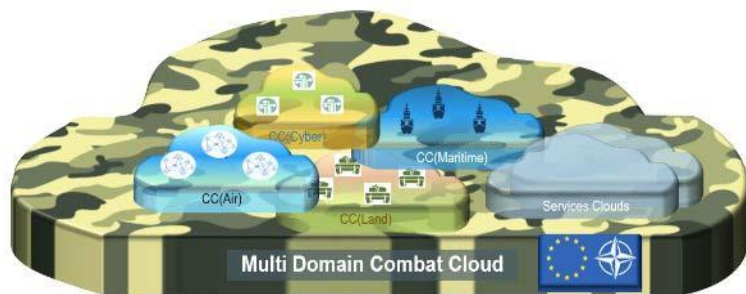
MULTI DOMAIN COMBAT CLOUD (MDCC)

Platform unspecific

Platform centric,
contested

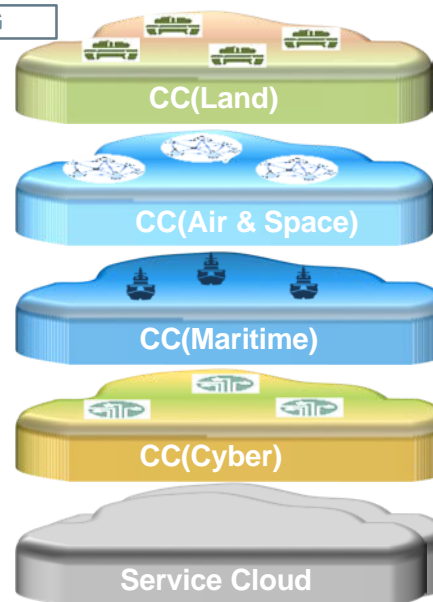
Collaboration
across all domains

CLOUD CORE



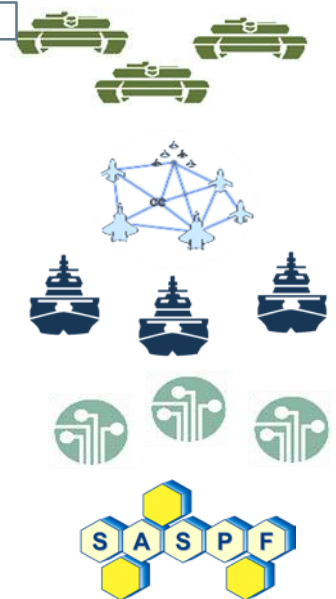
System-of-Systems
Military Domains + ?

FOG

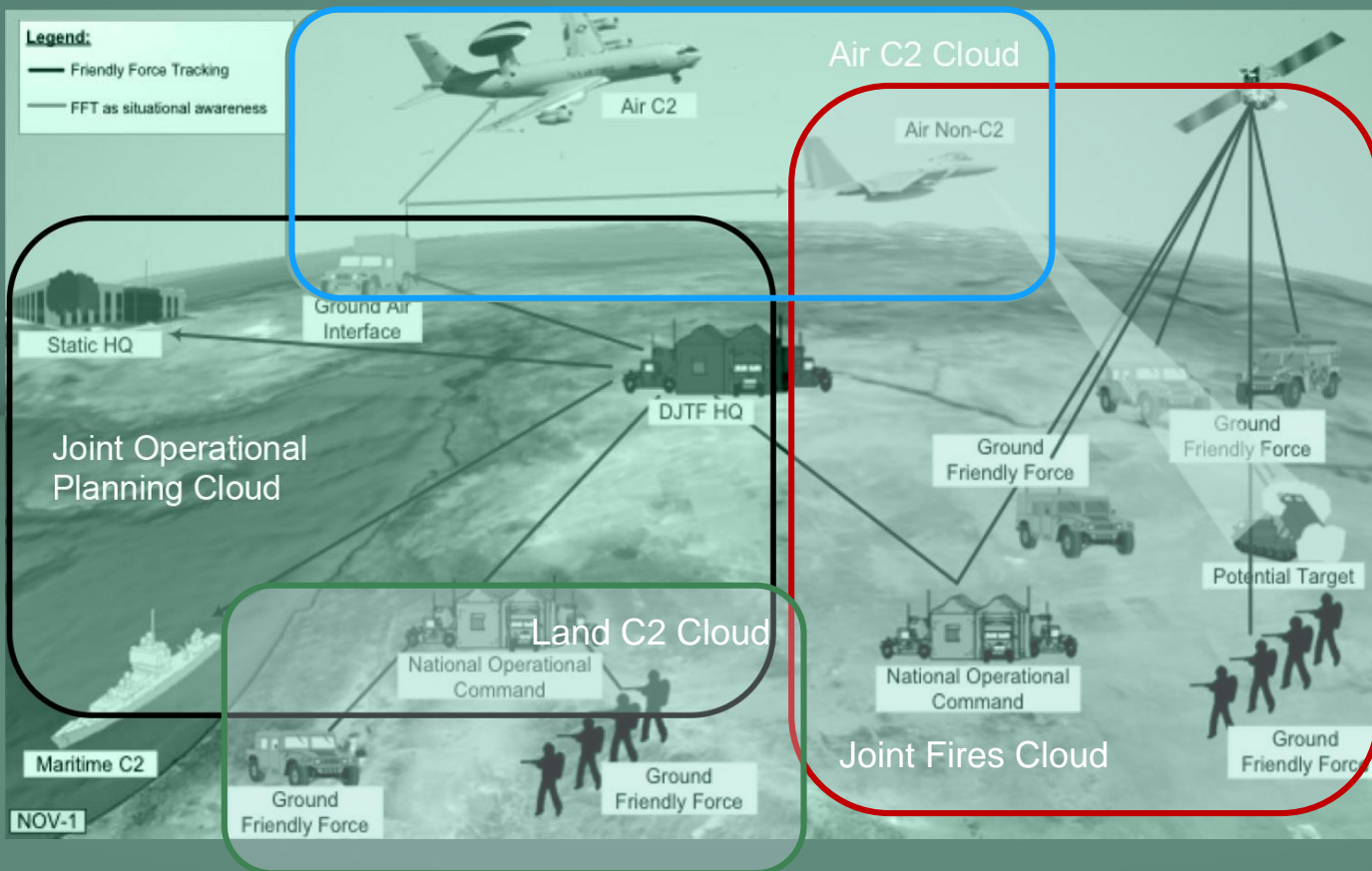


Weapons platforms

EDGE

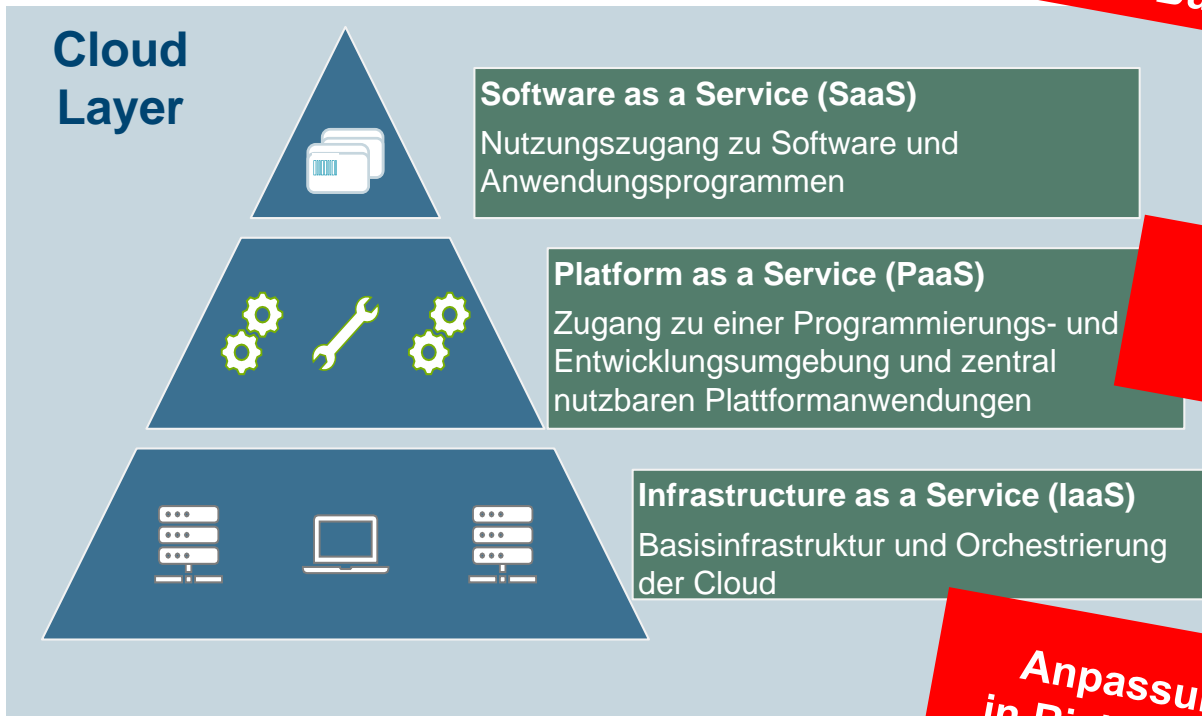


MULTI-OPERATIONAL DOMAIN CLOUDS



- Cloud spezifische, flexible Services
- Multinationale Cloud Interoperabilität
- Überlappende Informationsräume
- Automatisierter Bezug Services & Daten pro Cloud
- Cloud Kollaboration
- Spezifisch abgesicherter Informationsraum pro Cloud

**Prinzip „Cloud First“
für zukünftige IT-Projekte der
Bundeswehr**



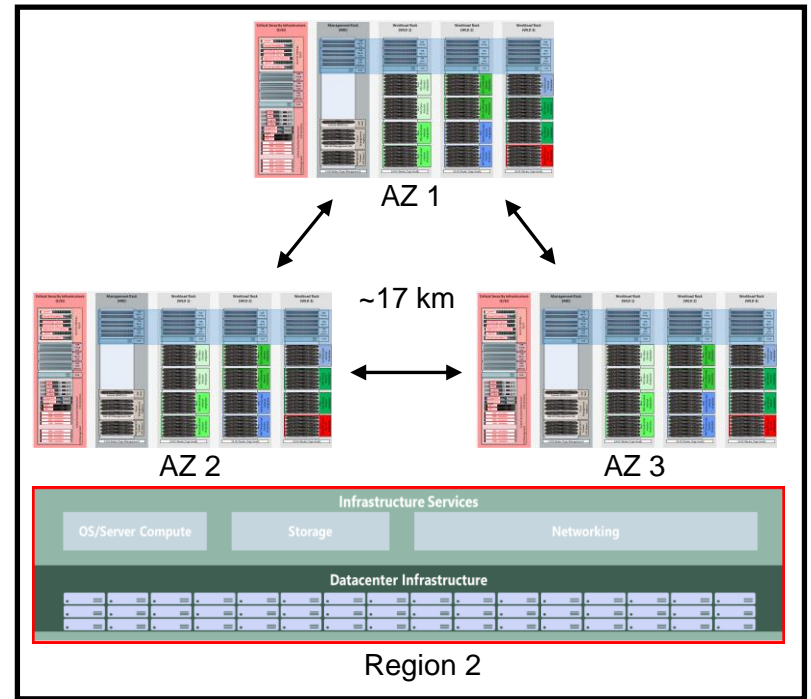
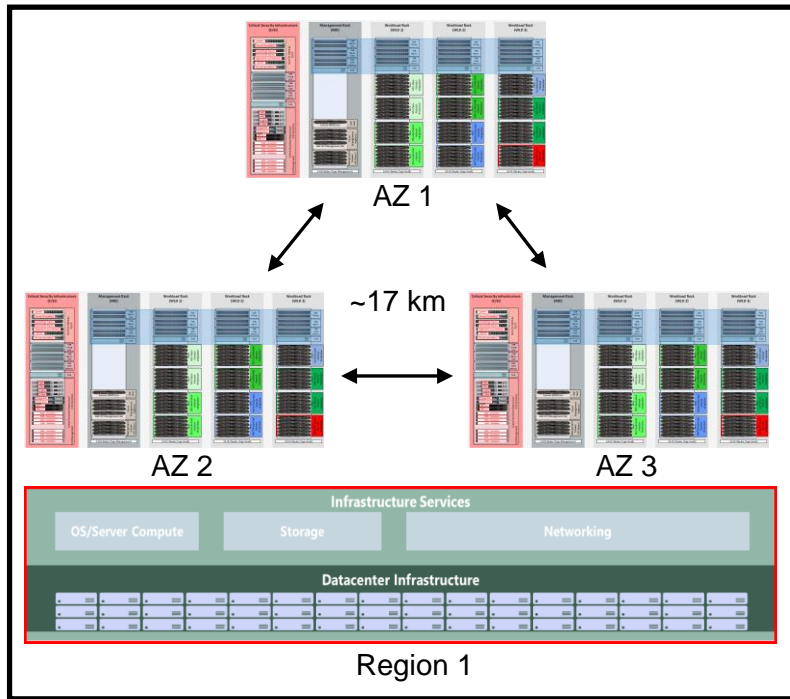
**Cloud Governance &
MN Förderierbarkeit**

Clusterprogramm 2021
Teil 1: Zielbild
für das Cluster
„Infrastructure & Cloud Base, User Equipment (ICU)“

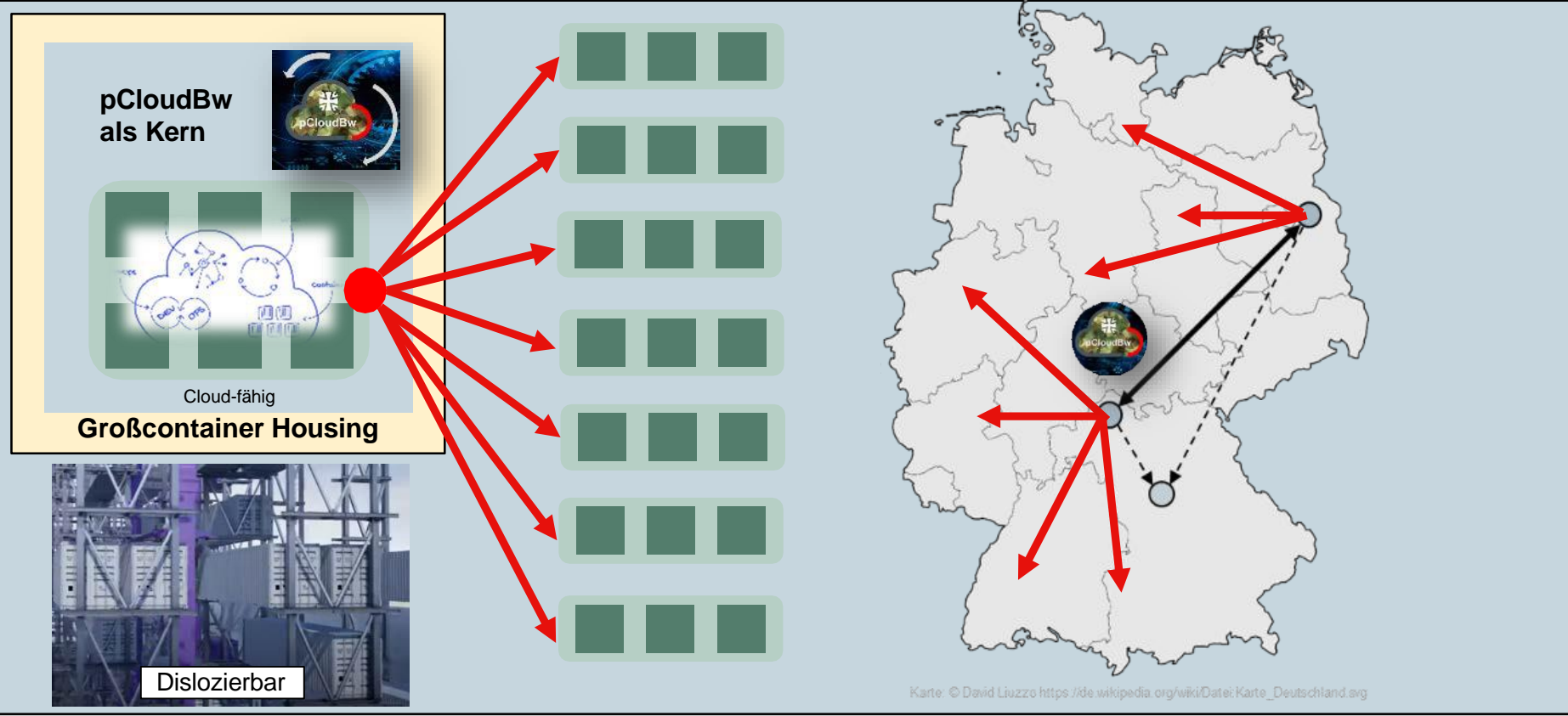
Eintrag:	
Gültig ab:	
Frist zur Überprüfung:	31.12.2021
Version:	1.1
Ersetzt:	Entfällt
Aktezeichen:	62-01-15

**Anpassung IT-Grundschutz
in Richtung IaaS, PaaS, SaaS?**

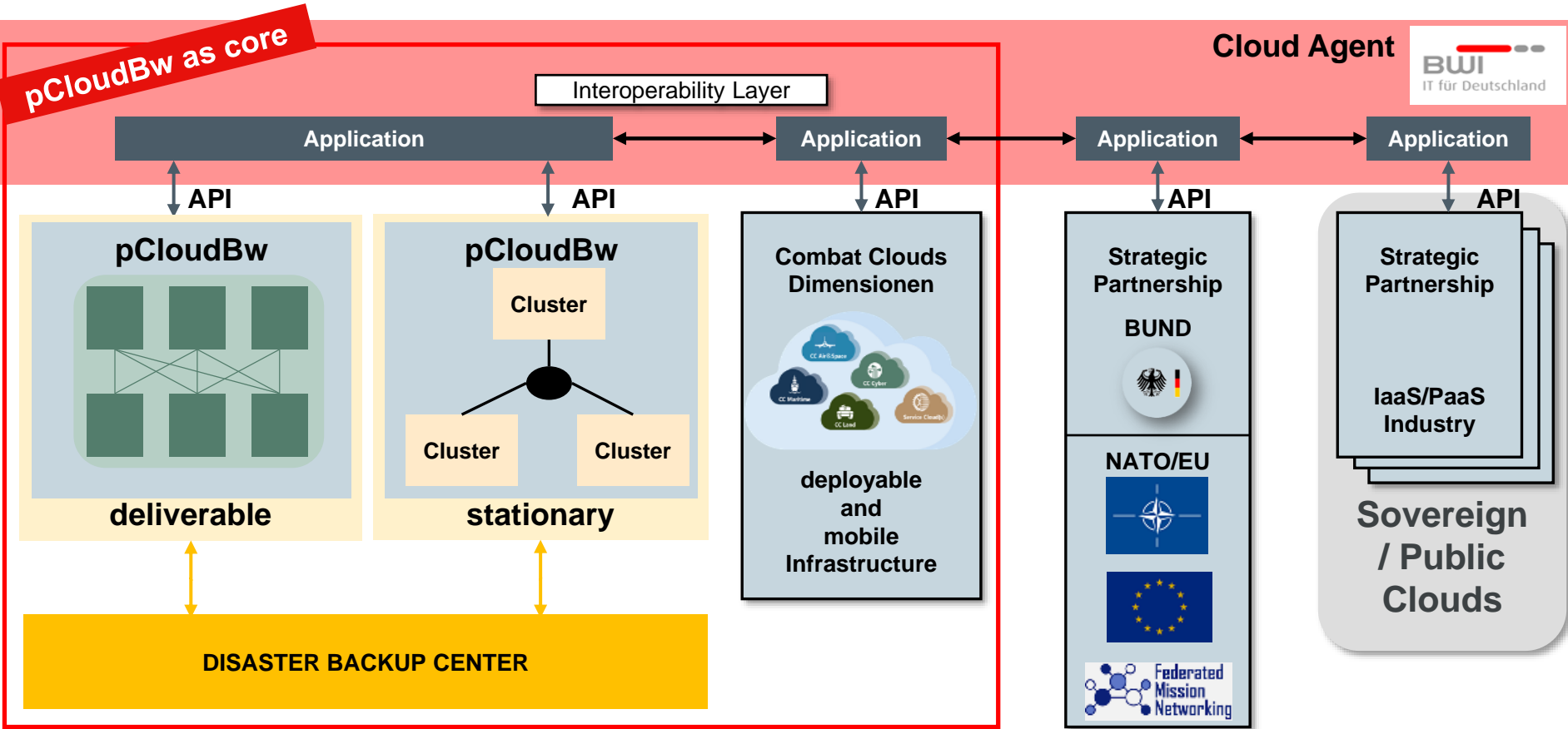
Regions & Availability Zones



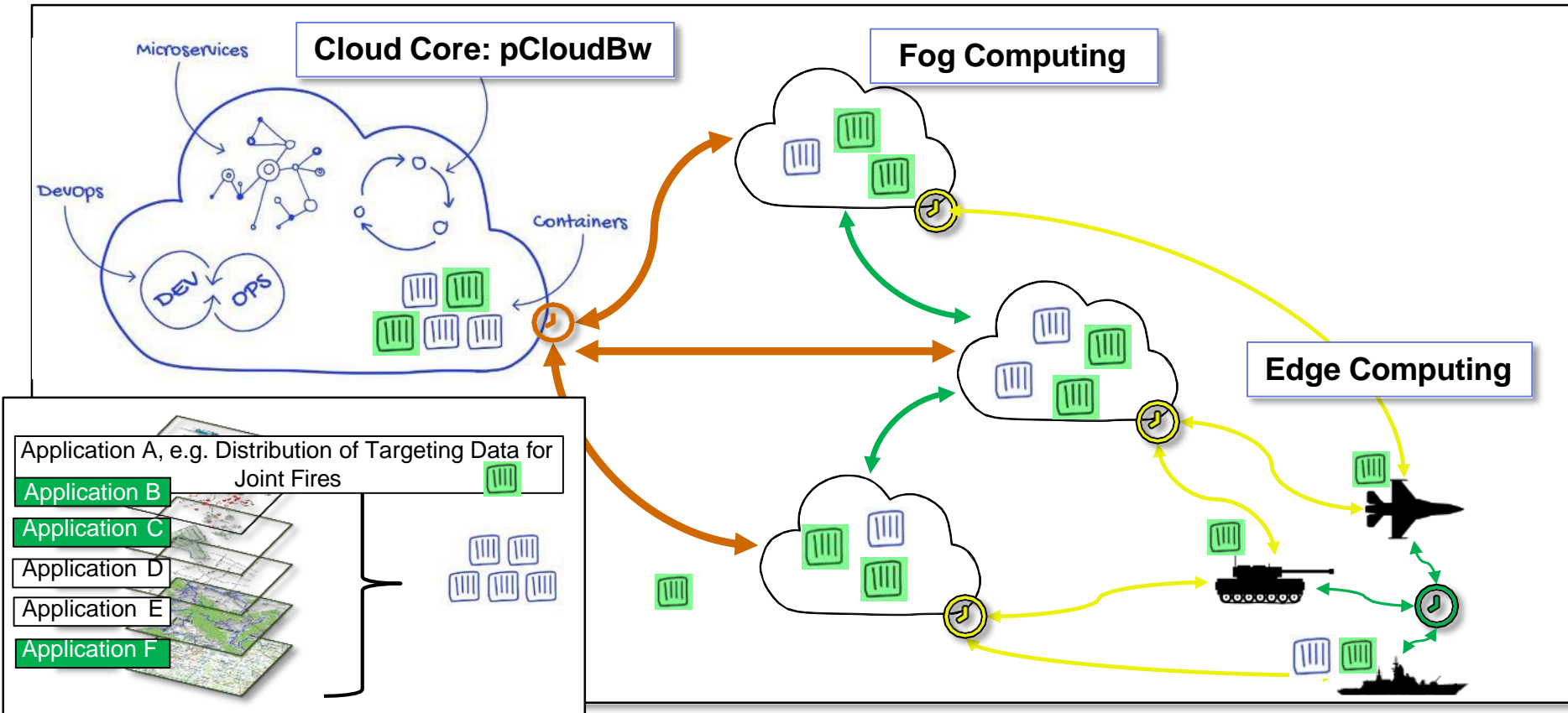
MÖGLICHE DISLOZIERUNG DER PCLouDBW (MILITÄRISCHER KERN)

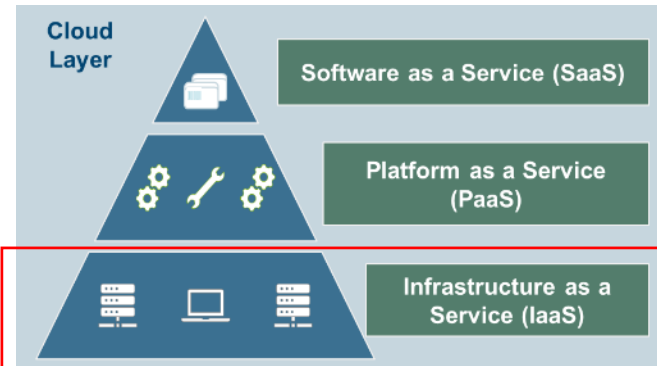
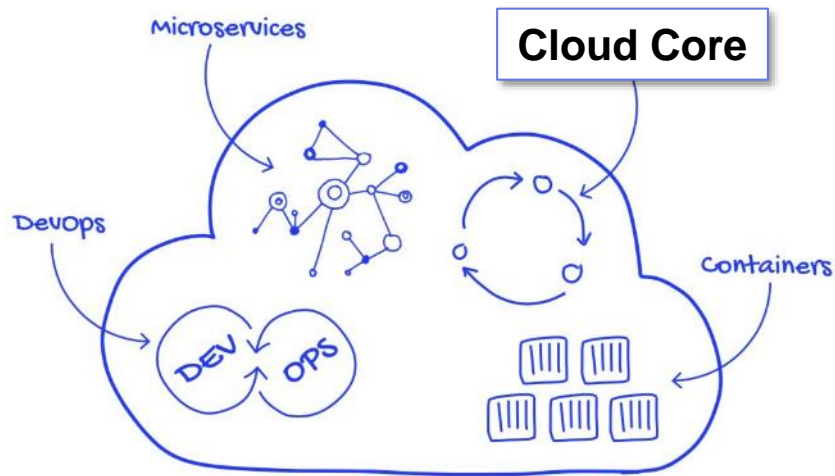


FEDERATION / MULTI-VENDOR CLOUD



END TO END (E2E) – CLOUD AND SDW





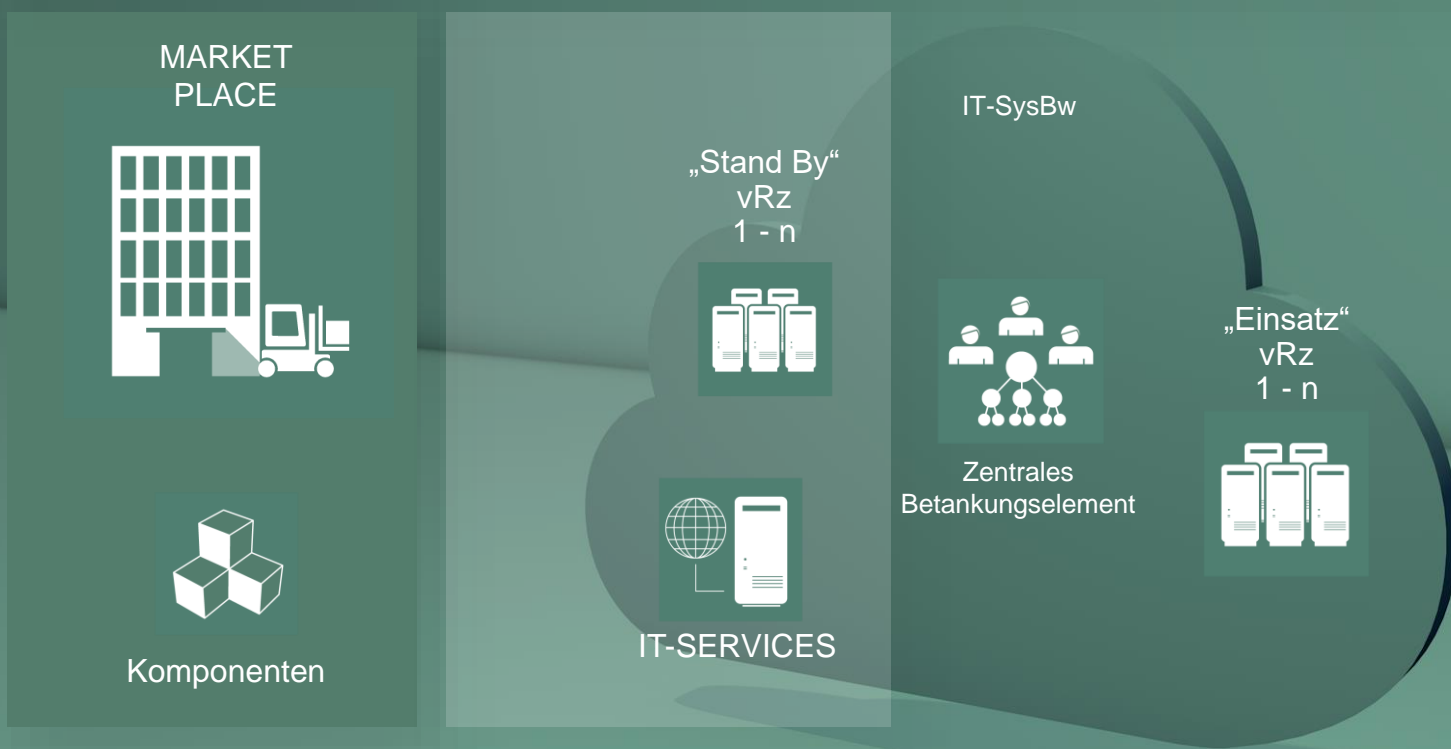
Rechenzentrum

Der „Verdichtungsfaktor“ beim Übergang kann nicht im Detail bestimmt werden.

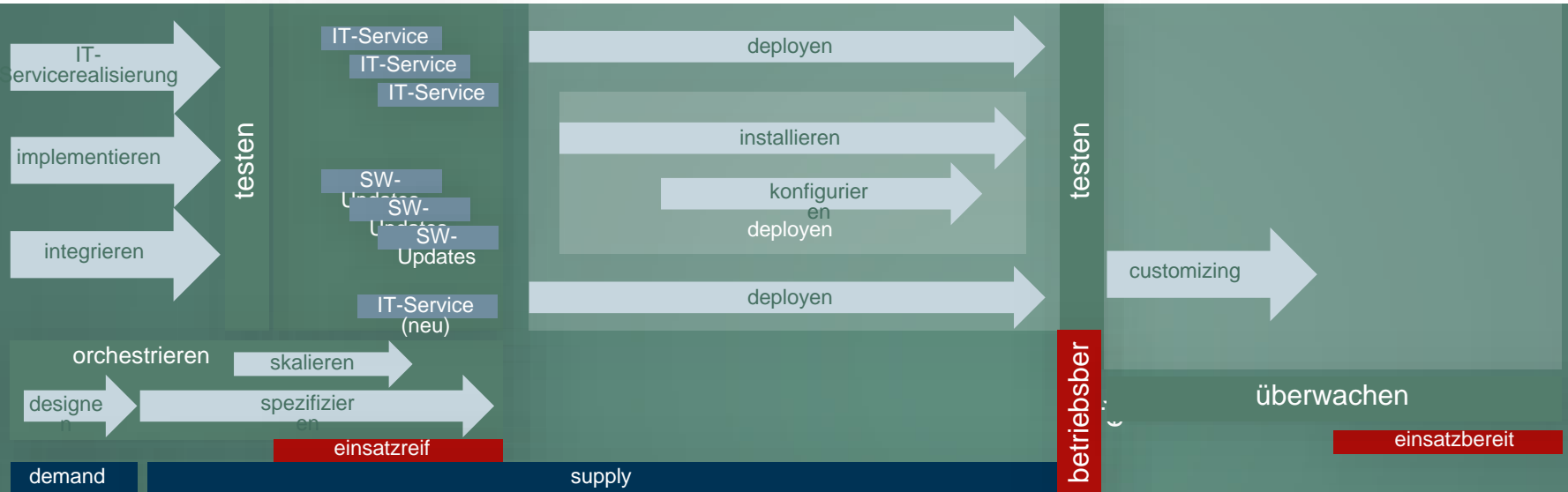
„Bare Metal“ / Virtualisierung



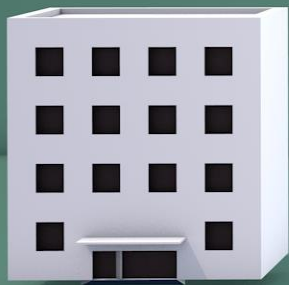
MaFaSBw – Serviceorientierter Herstellungsprozess (SoHP)



MISSION NETWORK INSTANZIERTUNG MANUFACTURING SERVICE BW



MARKET PLACE



HERSTELLUNG



Digitalisierungsplattform

Planung

Implementierung

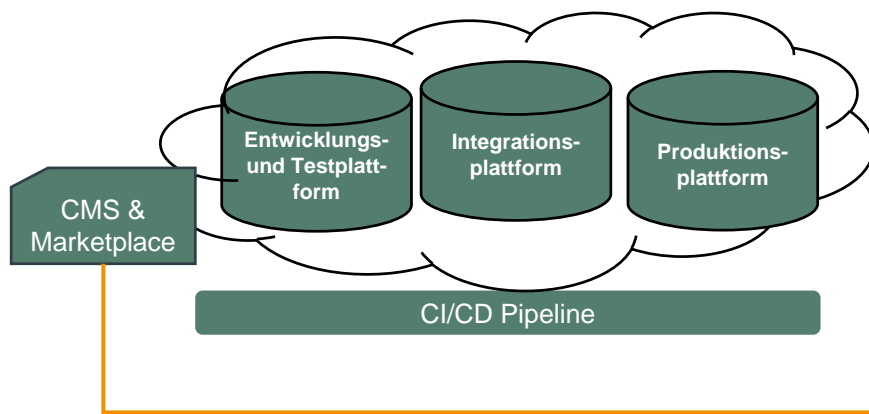
Operations

Demand Management

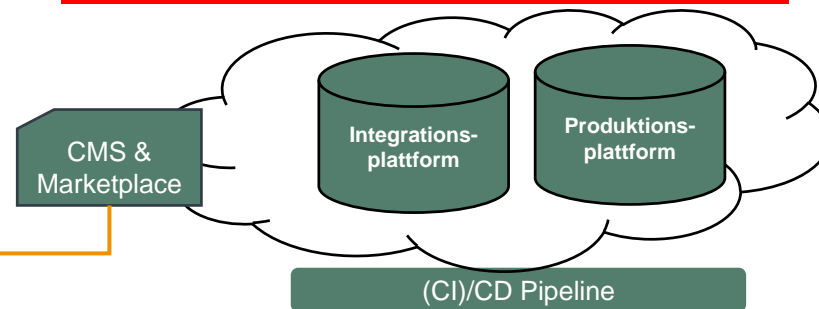
Strat. IT-Bebauungsplanung

Portfolio Management

Automatisierte CI/CD Pipeline

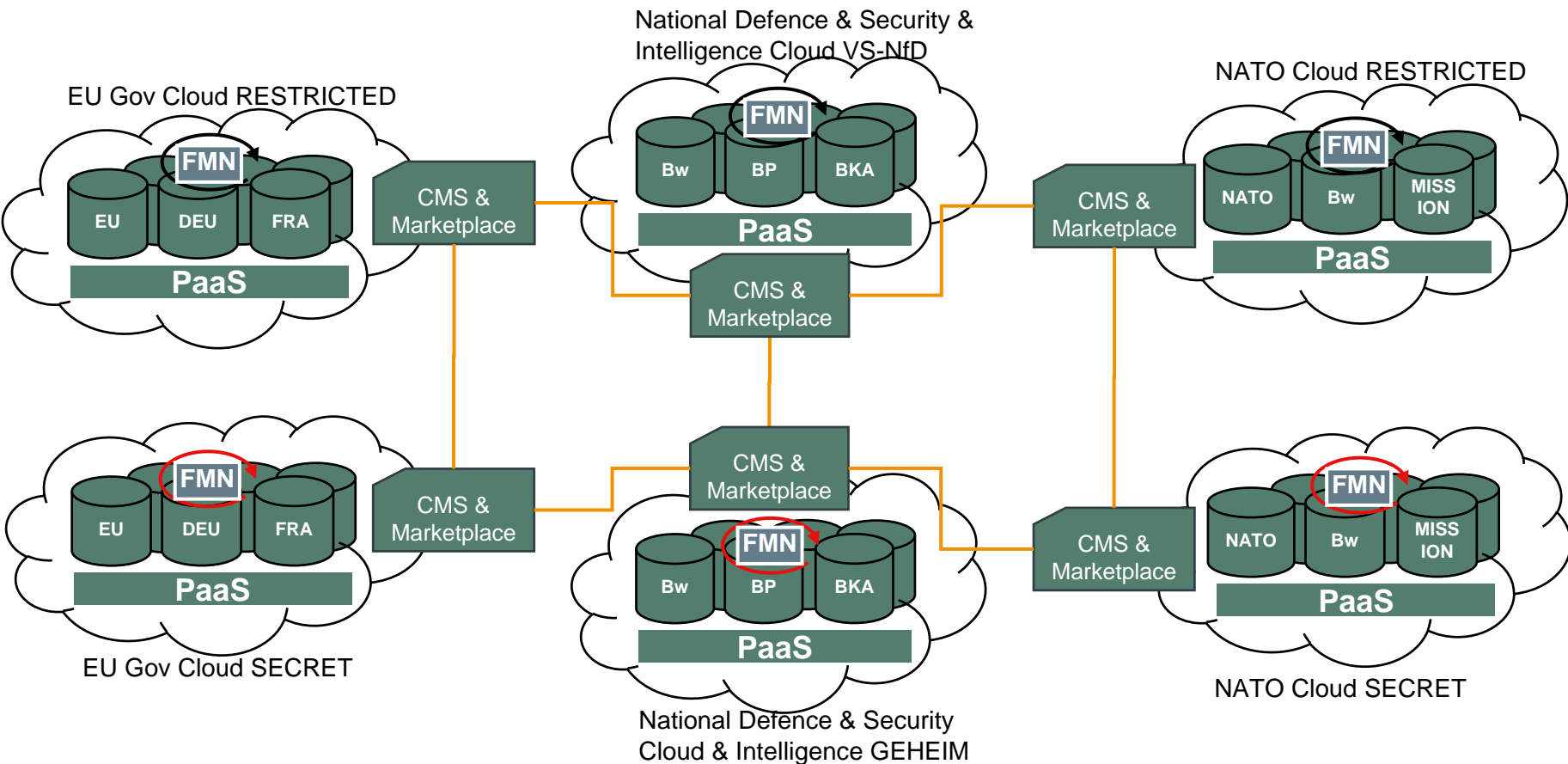


Market Place & Pipeline Akkreditierung



Governance

KONSOLIDIERUNG DER CLOUD-PLATTFORMEN STÄRKUNG DES FÖDERATIVEN ANSATZES



STRATEGISCHE HERAUSFORDERUNGEN



Bedrohungslage LV/BV



Dezentrale mobile Rz-Infrastruktur
Cloud-Computing-Architektur
Nationale Cloud Governance
hohe deployment Raten

Resilliente Cloud



NATO Verteidigungsplanung



Multinationale Föderation Cloud
Cloud Integration
in (black box) Waffensysteme

Cloud Governance

MN Multi-Cloud-Architektur



Strategischer Planungshorizont IT-Sicherheit by Design



Planbares CLOUD Akkreditierungs- Framework