CyberNEMO

End-to-end Cybersecurity to NEMO Meta-OS

cybernemo.eu

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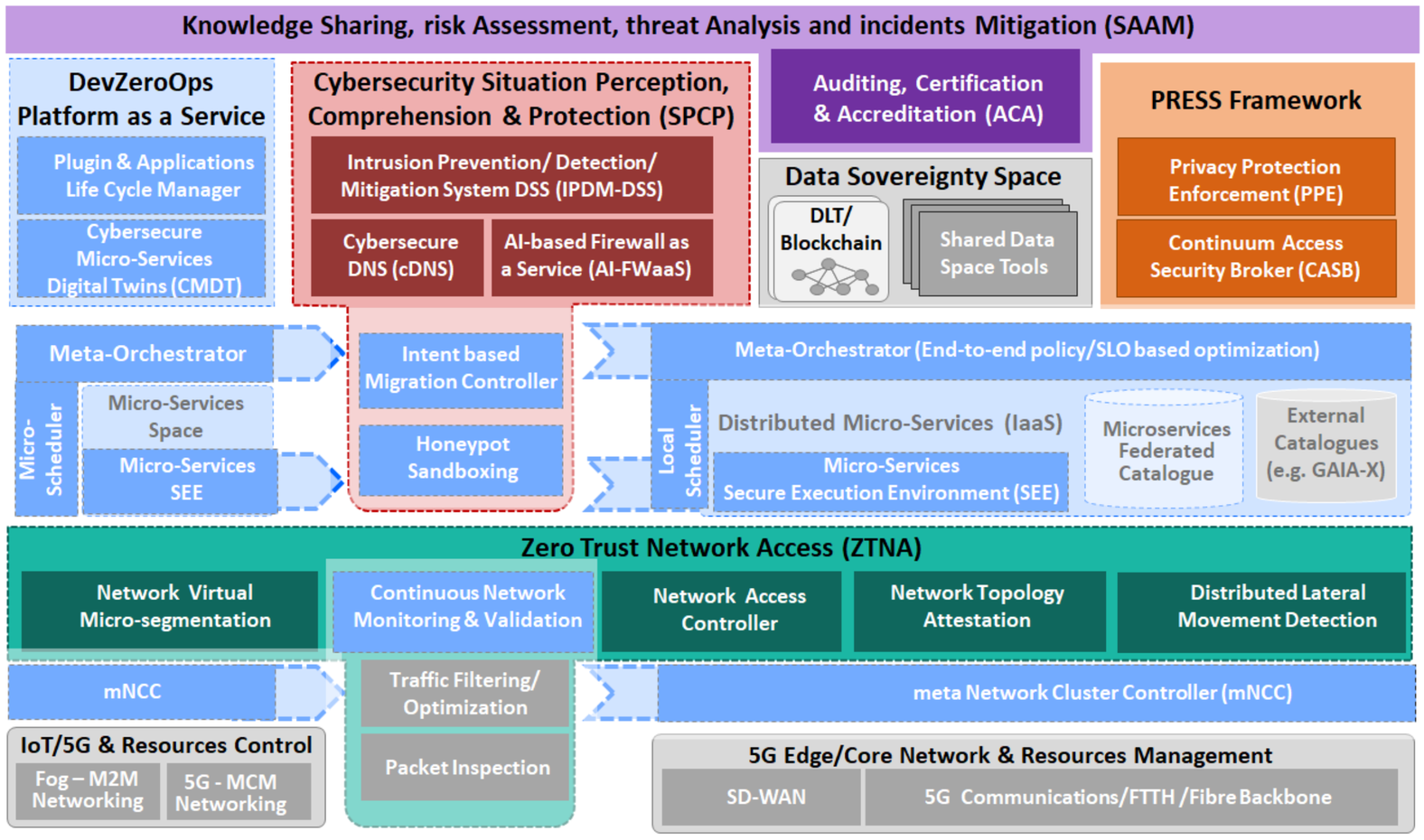
ZTNA in Computing Continuum

CyberNEMO enhances end-to-end cybersecurity and trust across the IoT-Edge-Cloud-Data continuum by building on NEMO (Next Generation Meta-OS), delivering an open, modular and adaptive platform to support secure, resilient and intelligent critical infrastructure and supply chain operations. The project introduces Zero Trust Network Access, explainable AI for situation awareness and threat response, collaborative auditing and certification services, and a pan-European framework for knowledge sharing, risk analysis and mitigation, addressing the increasing complexity and interdependence of connected systems.

Architecture



Zero Trust Network Access (ZTNA)
Identity verification
Least privilege access

Cybersecure Micro-services Digital Twins (CMDT)
Traceability
Scalability
via blockchain/DLT

Secure Execution Environment (SEE)
Secure microservice lifecycle management

Evidence-based Certification & Accreditation assurance
Auditing
Accountability

Network Microsegmentation
Flexible, software-defined Security perimeters

Situation Perception, Comprehension & Protection (SPCP)
AI-driven anomaly detection and threat analysis

PRESS Framework
Privacy, data pRotection, Ethics, Security & Societal

Collaborative SAAM Platform
Knowledge Sharing, risk Assessment, threat Analysis and incidents Mitigation

Trials

Pilot	Description
Integration Infrastructure Technology Lab	Integration of cybersecurity, IoT, and 5G/6G testbeds
Smart Energy & Smart Water Critical Infrastructure	Protection of energy/water networks against cyberattacks and data breaches
Secure and Intelligent Media Content Supply Chain	Secure multimedia distribution in multi-domain Edge-Cloud environments
Proactive & Intelligent Protection of Healthcare Critical Infrastructures	Security of medical data, prevention of unauthorized access, and early threat alerts
Smart Farming and FinTech/Logistics Supply Chain	Traceability, transparency, and security in agrifood supply chains
Pan-European SAAM multi-Living Labs Federation	Pan-European federation of labs for cross-validation and data governance

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