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MERIT

The evolution of Digital Identity: The IAM Pillar and Beyond

Exploring the Results of the MERIT EU project

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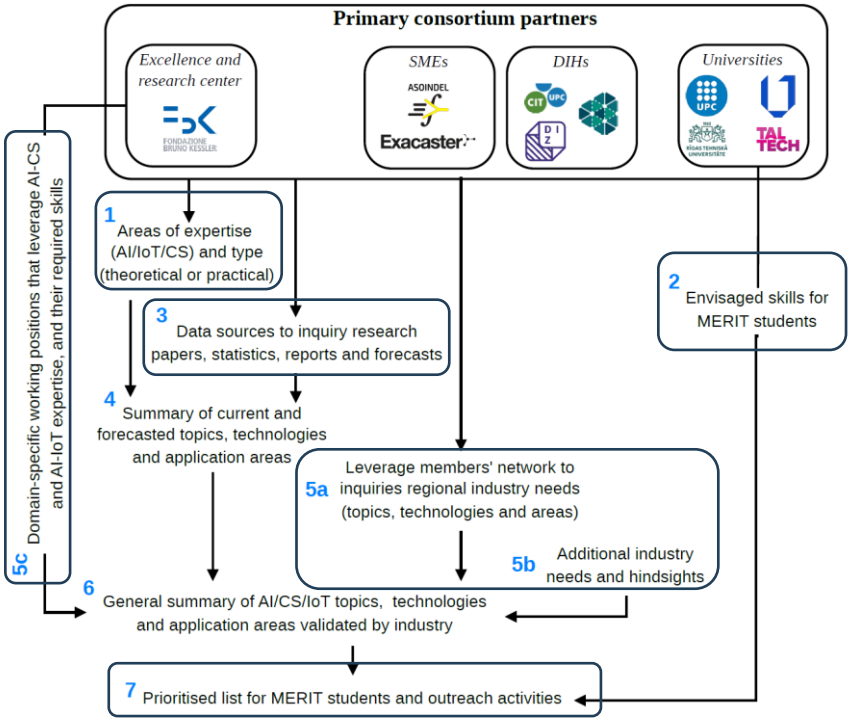
4th International Workshop on Trends in Digital Identity (TDI 2026)

MSc degrees in Smart, Secure and Interconnected Systems

- A Multi-Regional Digital Ecosystem: 5 specialized EU master programs in AI, Cybersecurity and IoT, designed to bridge the advanced digital skills gap.
- A Cross-Sector Consortium: A collaborative network of Universities, Research Centres (FBK), and SMEs, currently training 300+ specialists across two student cycles.
- The "MERIT Engine": A rigorous 7-step methodology that annually synchronizes academic curricula with real-time market needs and technological shifts.

https://digitalmerit.eu/

The 7-steps methodology



ESCO European classification of Skills, Competences, Occupations and Qualifications

European e-Competence Framework

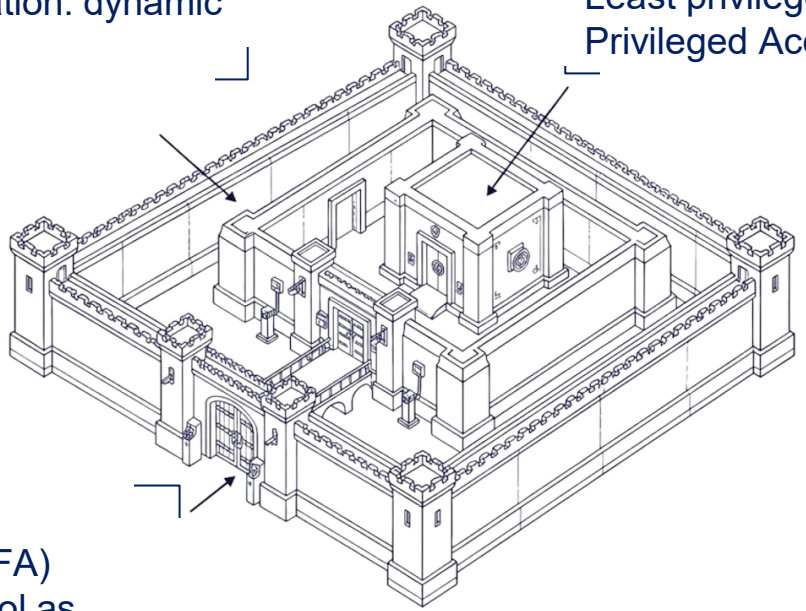
ELSEVIER Scopus

Mapping with MERIT courses

Year 1 (2023) – The IAM bedrock

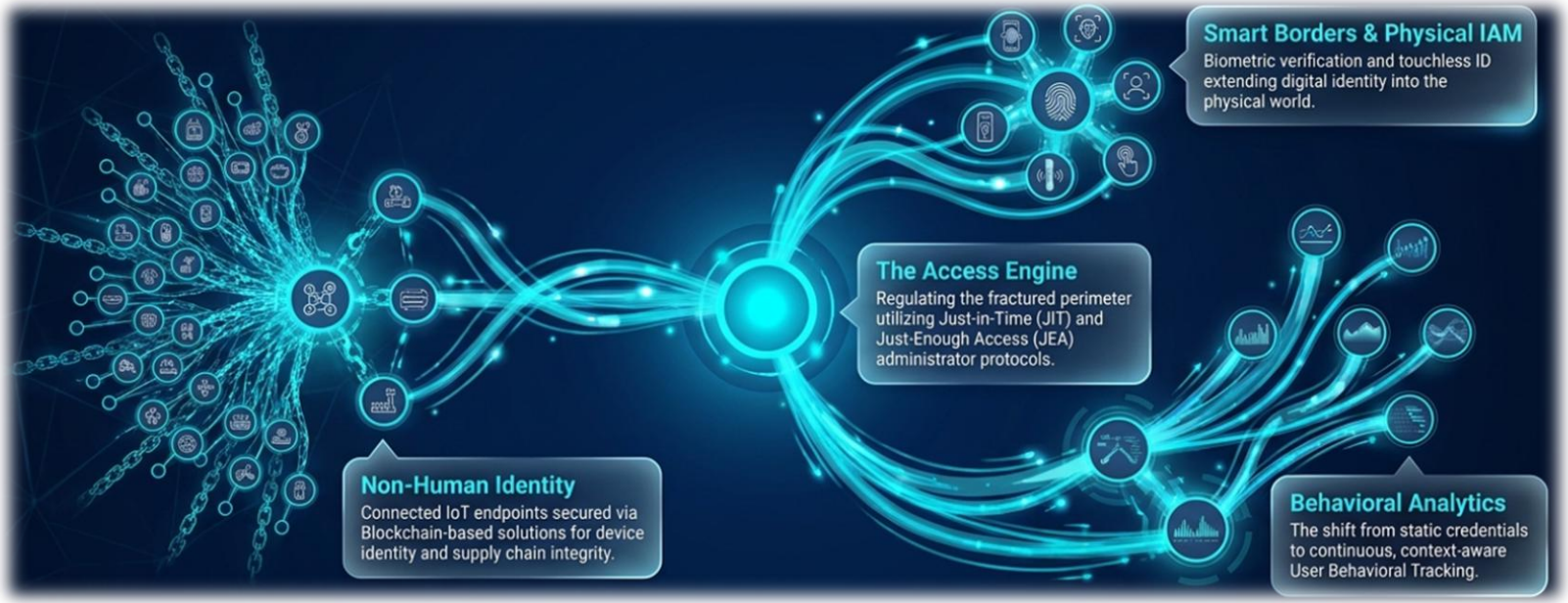
The Inner Ward
Preliminary AI-CS integration: dynamic risk evaluation

The Vaults
Least privilege (JEA/JIT) and Privileged Access Workstations (PAWs)

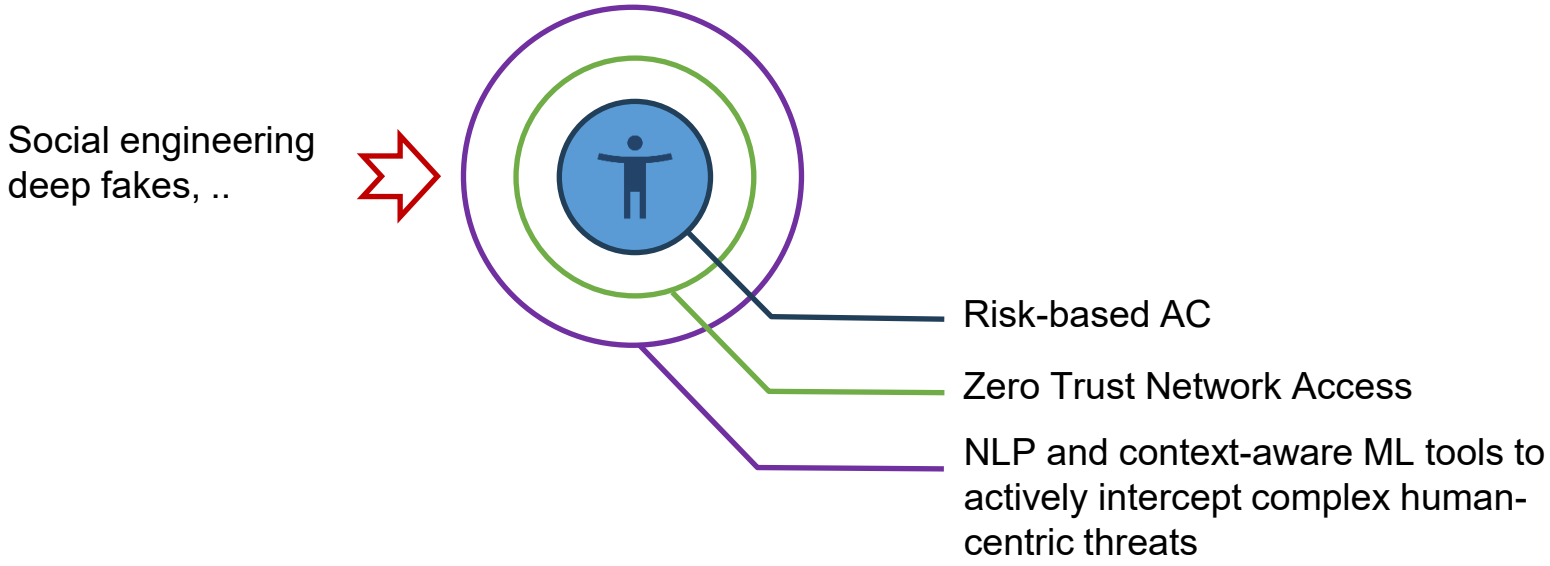


The Gateway
Multi-factor Authentication (MFA) and Conditional Access Control as the primary, immovable entry gateways

Year 2 (2024) – Identity at the distributed edge



Year 3 (2025) – Ai-driven Zero Trust defenses



Year 4 (2026) – IAM as the adaptive identity fabric

Secure users and devices:

- **Phishing detection and social engineering analysis**
  -> Deepfake detection and active mitigation against synthetic media
  -> Phishing resistant MFA and passkeys
- **Securing IoT ecosystems and device-level anomaly detection**

Cross-domain expertise

- CS+AI or CS+IoT valued up to 12% (salary increase)

Proactive resilience, driven by aligning with EU legislations

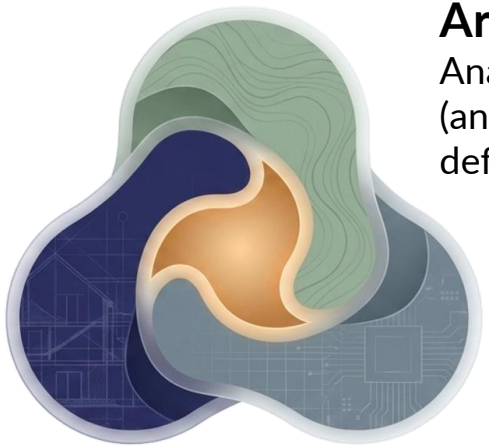
➔ **Build on current security mechanisms**

➔ **Prepare for NIS3**

The interdisciplinary imperative

Artificial Intelligence
Analytics
(anomaly detection, deepfake defence, agentic AI)

Cybersecurity
SOTA protections
(Zero Trust, IAM, Encryption)



Internet of Things
Physical context
(edge telemetry, device-oriented security)

Digital Identity requires professionals who can navigate those three (or more) disciplines simultaneously to protect complex systems

IAM evolution (2023-2026)

MERIT

Year 1 (D 3.1)	Year 2 (D 3.3)	Year 3 (D 3.4)	Year 4 (D 3.5)
Approach Foundational	**Approach** Cyber-physical	**Approach** Zero Trust & AI	**Approach** Human-centric
Key technologies MFA, PAW, Conditional AC	**Key technologies** Biometrics, Touchless ID	**Key technologies** ZTNA, risk-based threat modelling	**Key technologies** Passkeys, deep-fake detection
Focus Infrastructure and policies	**Focus** UX and smart borders	**Focus** Dynamic Beha-vioural Analysis	**Focus** Defend from social engineering

The modern security paradox

Advanced ZTNA architectures, Autonomous AI detection, post-quantum cryptography

Up to 85% of all security breaches

The User

Technology has never been so advanced, but
the weak link has changed: the perimeter is not the digital wall, but the human layer

Shaping the Digital Trust of the future

IAM evolved from a static security pillar into a living, adaptive ecosystem

- From a technological conformity to “anthropocentric resilience”
- From static authentication to continous intelligence

Academia and industry share the same mission: Co-create interdisciplinary cyber defenders

- Up to 12% salary increase when proficient in two or more of the AI/CS/IoT domains

D3.5 Results: the Cybersecurity list

Adaptive Identity & Human-Centric Defense	Expertise & Topics: - Designing workflows that mitigate Human-Centric Security & Social Engineering threats (**X1**). - Managing complex Identity and Access Management (IAM) systems.
	Technologies: Deploying Deepfake Detection (**X2**) to counter synthetic media attacks.
	Application Area: Focuses primarily on the Human Layer (Workforce & Digital Identity).
Zero Trust & Critical Infrastructure Architecture	Expertise & Topics: - Mastering Zero Trust Architecture (ZTA). - Network Defense & DDoS Mitigation to protect IoT, OT, and Critical Infrastructure Security (**X1, X2**). - Cloud Security & Infrastructure (**X1**).
	Technologies: Implementing Cloud-native application protection platforms (CNAPP).
	Application Areas: - Protecting Critical Infrastructure & OT (**X1**). - Manufacturing & Industry 4.0 (**X1, X2**). - Cloud Environments & Virtual Infrastructure (**X1**). - The Government & Defense Industrial Base.
Autonomous Cyber-Ops & Resilience	Expertise & Topics: - Integrating Threat Intelligence into Incident Response (IR) and Resilience workflows (**X1**).
	Technologies: - AI-Powered Defense & Agentic AI for automated response (**X1**). - SIEM & SOAR Platforms for orchestration. - Threat Intelligence & Deception Platforms.
	Application Area: AI Ecosystems.
Quantum-Ready Privacy & Data Persistence	Expertise & Topics: - Applying Data Security & Privacy Engineering principles to protect sensitive assets (**X1**).
	Technologies: - Confidential Computing for data-in-use protection. - Post-quantum cryptography to stay ahead of future decryption threats. - Immutable backup systems for disaster recovery.
Ecosystem Integrity & Compliance Governance	Expertise & Topics: - Managing Supply Chain & Third-Party Risk Management (TPRM) (**X1**). - Ensuring compliance with frameworks like the AI Act or NIS2 (**X1**).
	Technologies: Software Bill of Materials (SBOM) and provenance tracking tools.
	Application Areas: managing the Software Supply Chain & Third-Party Vendors.

X1 - in line with MERIT HEIs vision for their students.

X2 - Relevant from the academic perspective (Scopus)

ESCO: 102 possible working positions