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(Eds.)

Proceedings of the

4th International Workshop on Trends in Digital Identity

TDI 2026

Verona, Italy
April 20–21, 2026

Preface

The “*4th International Workshop on Trends in Digital Identity*” (TDI 2026) took place on April 20–21, 2026, in Verona, Italy, hosted at the Verona Campus of the *Universitas Mercatorum Telematic University*, within *Fondazione Centro Studi Campostrini*. The event brought together a diverse community of experts to discuss recent innovations and open challenges in the digital identity landscape.

Motivation

Digital identity now underlies nearly every digital interaction, from e-commerce and e-government to healthcare and finance, making it one of the fundamental building blocks of modern digital infrastructure. This transformation is being accelerated by the rollout of the European Digital Identity Wallet and the European Business Wallet, which are giving fresh momentum to how citizens and businesses across Europe manage and use their identities online. As identity management takes on a more central role in enabling security services such as access control, it also brings a set of pressing challenges: ensuring interoperability and usability at scale, while satisfying increasingly stringent data protection and privacy regulations. Navigating this complex landscape demands close, ongoing cooperation among academia, industry, standardization bodies, and public administration. It is within this context that TDI 2026 brings stakeholders together, working toward a shared transformation that places security, compliance, and trust at the heart of future digital services.

Structure

This edition featured a dynamic format combining talks and scientific presentations, all selected through open calls, and introduced two key changes with respect to previous editions. First, the workshop was **extended to a one-and-a-half-day format**, allowing more time for presentations, discussion, and networking. Second, a **Call for Talks was introduced** alongside the traditional Call for Papers, broadening the range of contributions and enriching the scientific and technical exchange.

The program was organized into six thematic sessions, each offering a different perspective on the ecosystem:

- **Session 1:** Security and Trust in the EUDI Wallet Ecosystem
- **Session 2:** Round Table
- **Session 3:** Cryptographic Resilience
- **Session 4:** Identity Protocol Evolution

- **Session 5:** Identity in the Age of AI and Privacy
- **Session 6:** Empowering the Next Generation

The centerpiece of the event was the Round Table, “The Wallet Revolution: Redefining Digital Interaction Through EUDIW and EUBW”, which offered a multi-dimensional perspective on the future of the European Digital Identity and Business Wallets. Panelists connected the experience gained from the first wave of Large-Scale Pilots (i.e., NOBID and POTENTIAL) with the current expansion phase (i.e., APTITUDE and WE BUILD), focusing on the practicalities of the “final mile” of adoption. Discussion topics included the technical interoperability and legal recognition of Electronic Attestations, the economic sustainability of the ecosystem, and the functional integration of personal and business wallets. Special attention went to how the European Business Wallet can ease administrative burdens for legal entities, and how stakeholders can keep pace with fast-evolving standards.

Open Calls

Contributions were solicited through two open calls: a **Call for Papers**, for original research and preliminary results, and a **Call for Talks**, for speaker-proposed ideas, ongoing work, or experiences. Both tracks were reviewed through dedicated selection processes to ensure a diverse and engaging program, covering topics including but not limited to:

- Access Control in IoT and Distributed Systems
- Behavioral and Risk-based Authentication Mechanisms
- Compliance with Regulations such as eIDAS (2), PSD2, NIS2
- Decentralized Identity and Self Sovereign Identity
- Digital Wallets and Verifiable Credentials (such as Selective Disclosure and Revocation)
- Identification, Onboarding and Know Your Customer (KYC) Procedures
- Identity for Web 3.0 and Metaverse
- Identity Governance and Administration
- Identity of Things and Cloud Security
- Mobile and Strong Authentication
- Non-Human Identities
- Passwordless Authentication (including Passkeys)
- Privacy-Enhancing Technologies for Identity Management
- Securing Identities for Financial, Governmental and Health Services
- Session Management for Seamless and Continuous Authentication

- Threat Modeling, Security and Risk Analysis of Identity Management Solutions
- Trust Frameworks for Identity Management Solutions
- Usability of Identity Management Solutions
- Zero Trust Architectures

The **Call for Papers** received **6 submissions**, each evaluated through double-blind peer review by three members of the Scientific Program Committee on the basis of technical quality, relevance, originality, significance, and clarity. Of these, **3 papers** were accepted as regular papers for this volume, while 1 submission was redirected to the Call for Talks.

The **Call for Talks** attracted **10 proposals**, each reviewed by the full Talk Program Committee, resulting in **8 accepted talks**. Together with the paper redirected from the Call for Papers, the final program comprised a total of **9 talks**. Authors of **4 selected talks** were further invited to submit **position papers**, which underwent a dedicated peer-review process for scientific relevance and are included in this volume.

Further details are available on the official website of the event: <https://st.fbk.eu/events/TDI2026/>.

Marco Pernpruner and Giada Sciarretta
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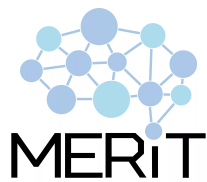
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Program

Monday, April 20, 2026

Opening Session

- INTRODUCTORY REMARKS
Marco Pernpruner, Giada Sciarretta (Program Co-Chairs)

Session 1: Security and Trust in the EUDI Wallet Ecosystem

Session Chair: Gianluca Dotti

- FROM NIS2 TO THE EUDI WALLET: PATH DEPENDENCE IN EU DIGITAL IDENTITY SECURITY AND ASSURANCE
Giorgio Pedrazzi (University of Brescia)
- TRUST AT EUROPEAN AND NATIONAL LEVEL: TECHNOLOGIES AND APPROACHES IN THE ITALIAN EUDI WALLET ARCHITECTURE WITH OPENID FEDERATION 1.0 AND eIDAS TRUSTED LISTS
Giuseppe De Marco (Dipartimento per la Trasformazione Digitale)
- EUDIW THREATS THAT HAVE NOT BEEN IDENTIFIED: USERS COLLUSION ATTACKS
Denis Pinkas (DP Security Consulting SAS)

Session 2: Round Table

Session Chair: Gianluca Dotti

- THE WALLET REVOLUTION: REDEFINING DIGITAL INTERACTION THROUGH EUDIW AND EUBW
Alessandro Bazzolo (InfoCamere), Luigi Castaldo (Nimirial S.p.A.), Francesco Vetrano (Intesi Group S.p.A.)

Closing Session

- FIRST DAY TAKE-AWAYS
Silvio Ranise (General Chair)

Tuesday, April 21, 2026

Opening Session

- SECOND DAY OPENING
Marco Pernpruner, Giada Sciarretta (Program Co-Chairs)

Session 3: Cryptographic Resilience

Session Chair: Alessandro Tomasi

- THE POST-QUANTUM APOCALYPSE IS ALREADY UPON US
Michael B. Jones (Self-Issued Consulting)

- SOFTWARE-ASSISTED ANALYSIS OF POST-QUANTUM CRYPTOGRAPHY MIGRATION FOR THE EUROPEAN DIGITAL IDENTITY WALLET
Salvatore Migliaccio, Paolo Campegiani, Giulio Di Clemente (Namirial S.p.A.)
- MIFARE DESFIRE IN PRACTICE: A SYSTEMATIZATION OF ATTACKS AND DEPLOYMENT WEAKNESSES
Tomáš Přeučil, Martin Novotný (Czech Technical University), David Oswald (Durham University)

Session 4: Identity Protocol Evolution

Session Chair: Andrea Moro

- THE JOURNEY TO OPENID FEDERATION 1.0 AND THE ROAD AHEAD
Michael B. Jones (Self-Issued Consulting), Giuseppe De Marco (Dipartimento per la Trasformazione Digitale), Roland Hedberg (Independent)
- EVOLUTION OF REMOTE ATTESTATION: A SYSTEMATIC LITERATURE REVIEW OF POST-2020 APPROACHES
Florian Wegscheider, Tobias Hilbig, Thomas Schreck (Munich University of Applied Sciences)
- THE IDENTITY MISMODELING CRISIS: RECTIFYING B2C AND WORKFORCE IAM MISUSE IN B2B ECOSYSTEMS
Anuradha Karunarathna (WSO2)

Session 5: Identity in the Age of AI and Privacy

Session Chair: Michael B. Jones

- SO MANY ANONYMOUS CREDENTIALS, SO LITTLE ADOPTION: CAN WE ESCAPE THE LINKABILITY WELL IN IDENTITY MANAGEMENT?
Andrea Moro (Fondazione Bruno Kessler)
- DESIGNING IDENTITY AND ACCESS MANAGEMENT FOR AI AGENTS
Thivaharan Kalyanasundaram (WSO2)
- PROVENANCE IDENTITY CONTINUITY (PIC): SECURE AUTHORITY PROPAGATION FROM HUMAN AND NON-HUMAN ORIGINS ACROSS TRUST BOUNDARIES
Nicola Gallo, Antonio Radesca (Nitro Agility Srl)

Session 6: Empowering the Next Generation

Session Chair: Amir Sharif

- THE IAM PILLAR AND BEYOND: EXPLORING THE RESULTS OF THE MASTER OF SCIENCE IN SMART, SECURE AND INTERCONNECTED SYSTEMS (MERIT)
Umberto Morelli (Fondazione Bruno Kessler)

Closing Session

- CLOSING REMARKS
Silvio Ranise (General Chair)

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