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(Eds.)

*Proceedings of the*

# **3rd International Workshop on Trends in Digital Identity**

**TDI 2025**

Bologna, Italy  
February 3, 2025

# Preface

The “3rd International Workshop on Trends in Digital Identity” (TDI 2025) took place on February 3, 2025, in Bologna, Italy. Hosted at *Plesso Belmeloro*, a University of Bologna facility, the workshop brought together a diverse group of experts and practitioners to discuss emerging trends, innovations, and challenges in digital identity. TDI 2025 was co-located with the prestigious “Joint National Conference on Cybersecurity” (ITASEC & SERICS 2025), held from February 4 to 7, providing additional opportunities for interdisciplinary collaboration and knowledge exchange.

## Motivation

Digital identity is increasingly recognized as a fundamental building block in the development and deployment of digital infrastructures and services across a wide range of sectors, including e-commerce, e-government, healthcare, and finance. As the adoption of digital technologies accelerates, the need for secure and reliable identity management solutions grows significantly and becomes the cornerstone of other security services, such as access control. However, this increased demand presents numerous challenges, including technical issues like security, interoperability, and usability, as well as legal and regulatory concerns related to data protection, privacy, and compliance.

To effectively address these challenges, collaboration among researchers and practitioners from various fields is essential. The workshop seeks to bring together representatives from academia, research institutions, industry, public administrations, and standardization bodies to discuss the evolving landscape of digital identity management. The objective is to drive a transformation process that ensures security guarantees, robust data protection, compliance, and a foundation of trust in digital services. By fostering these discussions, the workshop provides a unique opportunity for interdisciplinary collaboration, with the aim of shaping the future of digital identity.

## Structure

The workshop featured a dynamic format, combining invited talks by national and international experts with presentations of peer-reviewed scientific contributions selected through a call for papers. This structure ensured a diverse and enriching experience, integrating expert insights with the latest research findings to foster a comprehensive understanding of current challenges and innovations in the field.

The program was structured around three thematic sessions, each highlighting the perspectives of different stakeholders in the digital identity ecosystem: *Industry*, *Government and Public Administration*, and *Academic Research*. The event concluded with the round table “*Digital Identity Wallet: Challenges Today, Solutions for Tomorrow*”, with experts from government and academia discussing the challenges and future of digital identity wallets. In particular, the discussion focused on impactful use cases, the ongoing initiatives of the Italian and European digital identity wallets, the usability and security challenges, as well as the organizational and technological changes required to support these ecosystems.

## Call for Papers

To collect and evaluate innovative research contributions, we released a public call for papers encouraging submissions on a range of 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
- 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

In response to the call for papers, we received a total of 7 submissions. Each submission underwent a single-blind peer-review process conducted by at least two members of the Program Committee, who assessed the papers based on their technical quality, relevance, originality, significance, and clarity. As a result, 4 papers were accepted for publication in this volume (2 classified as regular papers and 2 as short papers). Additionally, this volume includes 3 invited papers derived from presentations given during the workshop.

Further details can be found on the official website of the event, available at the following link: <https://st.fbk.eu/events/TDI2025/>.

Marco Pernpruner and Giada Sciarretta  
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# Program

## Opening Session

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

## Session 1: Industry

*Session Chair: Amir Sharif*

- A MODEL THEORETIC APPROACH TO DIGITAL IDENTITY  
*Luca Boldrin (InfoCert S.p.A. and University of Padua)*
- FEDERATED IDENTITY IN RESEARCH  
*Marina Adomeit (SUNET)*
- ELECTRONIC ATTESTATION OF ATTRIBUTES EXTENDED VALIDATION SERVICES  
*Luigi Castaldo, Gianmario Cortese, Simone Izzo, Fabrizio Balsamo (Namirial S.p.A.)*
- PROFILES FOR ACHIEVING INTEROPERABILITY IN THE EUDI WALLET ECOSYSTEM  
*Andreea Prian (iDAKTO)*
- ZTAUTH\*: REVOLUTIONIZING AUTHN AND AUTHZ WITH AUTONOMOUS-DISCONNECTED CHALLENGES  
*Nicola Gallo, Antonio Radesca (Nitro Agility Srl)*

## Session 2: Government and Public Administration

*Session Chair: Giada Sciarretta*

- UNLOCKING TRUST: BRIDGING OPENID FEDERATION AND EUDIW TRUST FRAMEWORK  
*Francesco Antonio Marino, Pasquale Cerqua (Istituto Poligrafico e Zecca dello Stato, IPZS)*
- MOBILE KEY ATTESTATION FOR LOCAL WSCD  
*Francesco Grauso (PagoPA S.p.A.)*
- DIGITAL IDENTITY WALLETS DEVELOPMENT ROADMAP WITH IT-WALLET  
*Giuseppe De Marco (Dipartimento per la Trasformazione Digitale, DTD)*

## Session 3: Academic Research

*Session Chair: Marco Pernpruner*

- ON DELEGATION OF VERIFIABLE PRESENTATIONS  
*Andrea Flamini (University of Trento and Politecnico di Torino), Andrea Gangemi, Enrico Guglielmino (Politecnico di Torino), Vincenzo Orabona (Eustema S.p.A)*
- DID:SELF – A REGISTRY-LESS DID METHOD  
*Nikos Fotiou (ExclID), George C. Polyzos (The Chinese University of Hong Kong), Vasilios A. Siris (Athens University of Economics and Business)*

- PERFORMANCE EVALUATION OF SELF-SOVEREIGN IDENTITY  
*Emin Adem Buran, Christian Prehofer, Srivatsav Chenna (Technical University of Munich and DENSO AUTOMOTIVE Deutschland GmbH)*

## **Session 4: Round Table**

*Session Chair: Silvio Ranise*

- DIGITAL IDENTITY WALLET: CHALLENGES TODAY, SOLUTIONS FOR TOMORROW  
*Francesco Buccafurri (University of Reggio Calabria), Andrea De Maria (Istituto Poligrafico e Zecca dello Stato, IPZS), Rosalia Galeano (Dipartimento per la Trasformazione Digitale, DTD)*

## **Closing Session**

- CLOSING REMARKS  
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