SECURED
NEWSLETTER

ISSUE #6 | DECEMBER 2025

EVENTS & NEWS

Pages 2-5 include project events and provide the final update of the project since it ends on December 31st.

NEW PUBLI-CATIONS

Page 6 includes the latest publications by the project.

BASIC INFO

Page 7 provides initial information regarding the project, including the members of the Consortium, basic facts of the project and social media platforms.
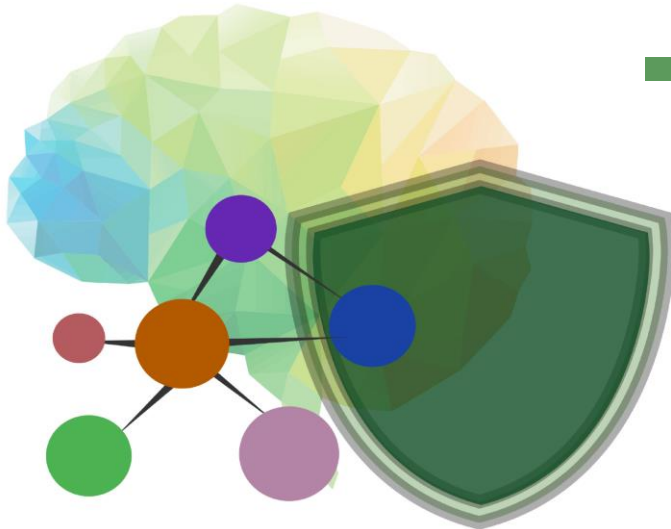
WELCOME

Welcome to the sixth and final newsletter of the SCALING UP SECURE PROCESSING, ANONYMIZATION AND GENERATION OF HEALTH DATA FOR EU CROSS BORDER COLLABORATIVE RESEARCH AND INNOVATION EU project, formally named also as SECURED.

In this newsletter we present the latest project's news, focusing on the results of the last events of SECURED: our second **Webinar "Enabling Trustworthy Health Data Innovation through the SECURED InnoHUB"**, and the **Second SECURED Demonstration Workshop** that was held in Badalona, Spain.

EVENTS & NEWS

SECOND SECURED WEBINAR: ENABLING TRUSTWORTHY HEALTH DATA PROCESSING THROUGH THE SECURED INNOHUB

The second webinar of the project takes a deeper look at how SECURED's technologies and services can support secure research and innovation in healthcare data. SECURED experts offer a practical understanding of different privacy-preserving approaches, demonstrate examples from real use cases, and explain how to access and use the InnoHUB platform.

Contents

- An introduction to SECURED and the ethical challenges of health data sharing.
- An accessible overview of **Federated Learning**, **Homomorphic Encryption**, **Anonymization**, and **Synthetic Data Generation** techniques.
- A walkthrough of the InnoHUB platform, and how to access its tools, services and libraries.
- Demonstrations of four **pilot use cases**, showing how SECURED tools are applied in real medical and research contexts:
  - *Data Privacy in Ultrasound-Assisted Neurosurgery*
  - *AI-powered Telemonitoring for Pediatric Patients*
  - *Synthetic Data Generation for Education*
  - *Genomics and Electronic Health Records*
- Presentations of InnoHUB's additional tools and services, including **Legal/GDPR Compliance Check**, and **Anonymization Decision Support**.

Find out more: https://secured-project.eu/2nd-secured-webinar/

Watch the video recording: https://youtu.be/mEIGkHa_hNI

SECOND SECURED DEMONSTRATION WORKSHOP
Badalona, 3-4 December 2025, Josep Carreras Leukaemia Research Institute

The **Second SECURED Demonstration Workshop**, hosted by **Josep Carreras Leukaemia Research Institute** on the 3rd and 4th of December 2025 in Spain, was an engaging two-day event dedicated to showcasing and testing the SECURED technologies with both healthcare and cybersecurity professionals. Participants had the unique opportunity to explore how **SECURED** enables **safe and privacy-preserving access and processing of various modalities of biomedical data**, through a combination of **expert-led seminars**, **practical demonstrations**, and **panel discussions**.

Day one was focused on the medical and clinical perspective, with sessions highlighting ethical considerations in healthcare cybersecurity, technology workshops, and practical demonstrations. This day was designed not only to train stakeholders on cutting-edge technologies such as Federated Learning, Fully Homomorphic Encryption, and De-anonymisation methods, but also to give them hands-on experience in evaluating real-world applications of these methods for biomedical and research environments.

On the **second day** the technical programme brought together cybersecurity experts and bioinformaticians to dive deeper into the technological foundations of SECURED, through showcases of anonymisation techniques and synthetic data generation, including collaborative presentations from SECURED's partners and open call participants. The workshop offered a rare chance for participants to directly contribute feedback to the project, while networking and exchanging ideas with an international community of experts.

A huge thank-you to Hanna (Hania) Kranas, Eduard Porta Pardo and Ivo André Pereira da Cruz from the Josep Carreras Leukaemia Research Institute (IJC) for hosting us with such care and professionalism.

Check the **link** for more information.

SECURED Open Call results

The SECURED InnoHUB brought its privacy-preserving tools, services, and libraries out of the lab and into the real world through five external projects selected via its Open Call. The results of the collaboration between SECURED experts and the projects' teams were presented at the 2nd SECURED Demonstration Workshop in Badalona, Spain.

In the following video, project representatives explain how they used SECURED technologies in practice, from synthetic health data generation and anonymization, to de-anonymization risk assessment and fully homomorphic encryption. They speak openly about what worked, what was challenging, and how these tools helped them unlock the use of sensitive health data while respecting privacy, ethics, and GDPR constraints.

The projects span cancer care, clinical trials, child support services, healthcare AI research, and cryptography-based medical applications. Together, they show how SECURED InnoHUB's technologies enable privacy-preserving data processing in actual healthcare scenarios.

Watch the video

Publications Highlight: De-anonymization Risks and Mitigation Strategies

Is "anonymized" health data really anonymous?

In this video interview, Hamza AGUELAL and Dr. Paolo Palmieri from University College Cork unpack a series of closely connected research works developed within the SECURED project.

Their work tackles a hard truth in health data sharing: removing obvious identifiers from health datasets is often treated as a safety guarantee, while in practice, real-world attacks have repeatedly shown how patients can be re-identified, especially in high-dimensional biomedical data.

The discussion covers:

- Why de-anonymization of health data is a demonstrated, not hypothetical, risk.
- How electrocardiogram (ECG) data embeds stable biometric signatures that enable re-identification Where current anonymization practices underestimate privacy leakage.
- How a risk-based, privacy-by-design approach developed by UCC can bridge the gap between research and secure real healthcare workflows.

The interview also introduces the **De-anonymization Risk Assessment Service** developed for the **SECURED InnoHUB**, a tool designed to help hospitals, researchers, and data providers measure privacy risk instead of assuming it away.

This is research that deliberately moves privacy from theory to practice, and treats privacy risk as something that must be tested, monitored, and revisited over time.

Watch the full interview: https://youtu.be/ToAKAM9fSIk

Publications mentioned in the interview:

1. Aguelal, H. and Palmieri, P. (2025). **De-Anonymization of Health Data: A Survey of Practical Attacks, Vulnerabilities and Challenges.** In Proceedings of the 11th International Conference on Information Systems Security and Privacy - Volume 2: ICISSP; SciTePress, pp. 595-606, doi: 10.5220/0013274200003899

2. Aguelal, H. and Palmieri, P. (2025). **"ECG De-Anonymization: Real-World Risks and a Privacy-by-Design Mitigation Strategy,"** 2025 IEEE 38th International Symposium on Computer-Based Medical Systems (CBMS), Madrid, Spain, pp. 449-456, doi: 10.1109/CBMS65348.2025.00095.

3. Aguelal, H. and Palmieri, P. (2025). **"HEALTH-DP: A Framework for Health Data De-Anonymization Risk Assessment and Mitigation with Differential Privacy."** (accepted, to be published)

Other Publications

Journal Articles

- Guidotti, D., Pandolfo, L., Gutierrez-Torre, A., Lopez-Rubio, O., & Pulina, L. (2025). **SynthVal: A Framework for Validating Synthetic Medical Images.** IEEE Access, 13, 195871–195903. DOI: 10.1109/access.2025.3633780.

- Recasens, P. G., Horváth, Á., Gutierrez-Torre, A., Torres, J., Berral, J. L., & Pejó, B. (2024). **FRIDA: Free-Rider Detection using Privacy Attacks.** JISA (Journal of Information Security and Applications), arXiv preprint arXiv:2410.05020.

Conference Proceedings

- Pejo, B., Frank, M., Varga, K., Veliczky, P., & Biczok, G. (2025). **On the Fragility of Contribution Score Computation in Federated Learning.** SaTML (Secure and Trustworthy Machine Learning Conference), arXiv preprint arXiv:2509.19921.

See all project publications

CONSORTIUM

The SECURED project is bringing together 17 partners from 9 different European countries highlighting the expertise to successfully accomplish the needs and goals of the project.

More info on the consortium here
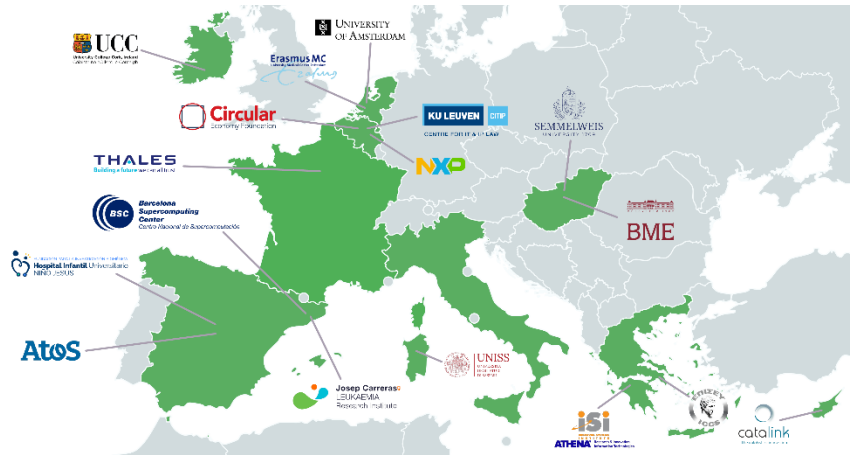
PROJECT BASIC INFORMATION

Title: SCALING UP SECURE PROCESSING, ANONYMIZATION AND GENERATION OF HEALTH DATA FOR EU CROSS BORDER COLLABORATIVE RESEARCH AND INNOVATION

Acronym: SECURED

GA No: 101095717

Start: 01 January 2023

End: 31 December 2025

Topic: HORIZON-HLTH-2022-IND-13-02

Type of action: HORIZON-RIA

Project Coordinator: Francesco Regazzoni

Project Coordinator Institute: University of Amsterdam

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