

Connected 5G-IoT Cyber Range for Training and Secure Operation

Project Coordinator

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Project Details

G.A. number: 101145872

Project Website: nitro-project.eu

Project start: 01/01/2024

Duration: 36 Months

Total cost: EUR 1862656

EC Contribution: 101145872

The NITRO consortium has now successfully submitted key deliverables detailing the project's progress, including the final NITRO architecture, along with the platform's initial design.

Building on these achievements, the consortium is now focused on enhancing the platform through ongoing integration efforts, finalising the security training exercises and refining of the user experience. Work Package 3 (Cybersecurity Training Exercises) and Work Package 4 (Scoring System and Gamification) continue to evolve, while Work Package 5 is officially in progress with the main goal of demonstrating and starting the first evaluation stage of the platform.

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NITRO project has received funding from the European Union's DIGITAL JU SME Support Actions under the grant agreement No. 101145872.

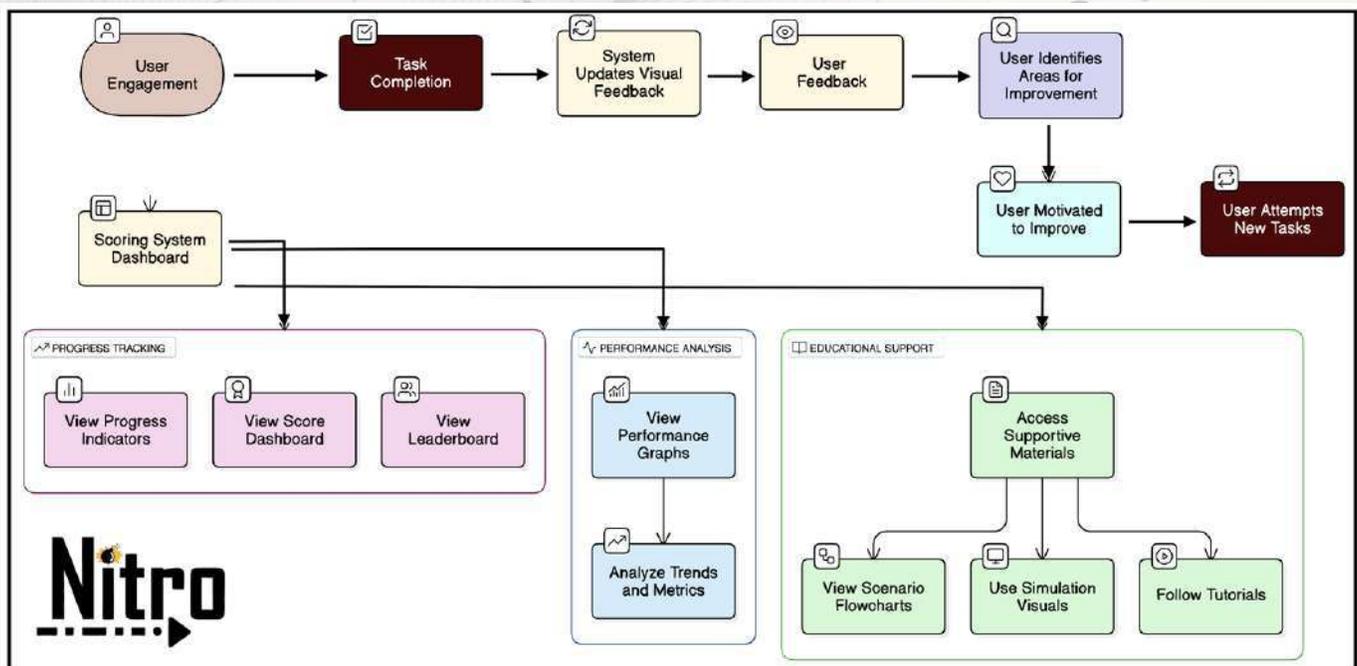
Visual Feedback & Engagement in NITRO

The NITRO scoring and gamification system uses intuitive visual elements to provide real-time feedback and support user engagement throughout cybersecurity training.

Key highlights include:

- Progress indicators showing task and mission completion
- Personalized dashboards with scores, badges, and rankings
- Performance graphs tracking progress and improvement over time
- Dynamic leaderboards encouraging collaboration and competition
- Educational visuals (flowcharts, diagrams, tutorials) that simplify complex concepts

By combining clear visuals with data-driven insights, NITRO delivers an engaging, transparent, and effective learning experience.



Blue Teaming Metrics in NITRO

The NITRO scoring system incorporates dedicated metrics to assess the effectiveness of blue team defensive actions, with a strong focus on continuous monitoring and incident response.

Key performance metrics include:

- Incident response times
- Number of successful defenses
- Vulnerability identification and assessment
- Effectiveness of security controls (e.g., IDS and firewall configurations)

In complex 5G and IoT environments, where attack surfaces and operational demands are significantly increased, these metrics enable real-time evaluation of network resilience and support continuous improvement of defensive strategies.

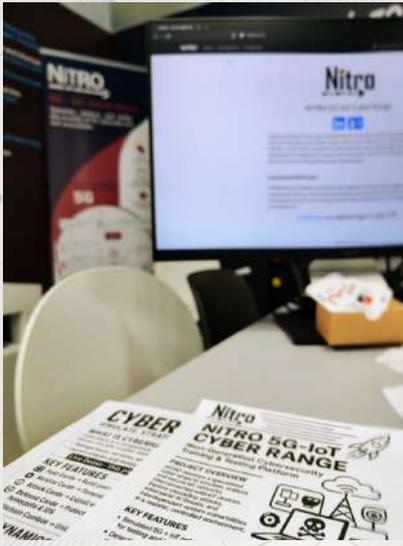
Through an integrated feedback loop, NITRO also supports hands-on learning and skills development, aligning blue teaming operations with cybersecurity education and real-world 5G security challenges.

NITRO Publications

1. Karagiannis, S., Kasotakis, A., Magkos, E., & Ntantogian, C. (2025, August). Red vs. Blue Team Training Scenarios for 5G/6G Networks. In International Conference on Availability, Reliability and Security (pp. 37-54).
2. Kourtesis, A., Leka, C., Lazaros, K., Vrahatis, A., & Ntantogian, C. (2026, March). From Poison to Antidote: Advancing Cybersecurity Education with AI Attack and Defense Training. Paper to be presented at the International Conference on Information Systems Security and Privacy (ICISSP2026) (pp. 37-54).



NITRO News Events



NITRO Project Showcased at Thessaloniki International Fair (TIF) 2025



NITRO presentation in Health IT conference 2025



Presentation at the Hellenic Broadcasting Corporation (ERT)



Stella Tsitsoula (HCSI) presents the NITRO Project on ERTnews Radio



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Upcoming Deliverables and Future Activities

NITRO researchers are working on deliverables and tasks in order to fulfill all the main objectives which will lead toward the completion of the project.

In the next months, researchers will work on the following deliverables:

- D3.2: NITRO data repository for threats and incidents
- D3.3: NITRO security training exercises design and development - second version
- D4.3: NITRO scoring and gamification system - second version
- D4.4: NITRO Infrastructure Integration - second version
- D5.1: Use cases results assessment - first version



Find us here!

Website: nitro-project.eu

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