



SECONDO

A Security ECONomics service platform for smart security investments and cyber insurance pricing in the beyond 2020 networking era

SECONDO Newsletter

Issue 10 | MAY 2022

WE INTRODUCE YOU TO THE TENTH SECONDO NEWSLETTER!

We are pleased to present you the tenth issue of the SECONDO Project Newsletter.

As technology develops more and more, Cybersecurity issues are arising every day. Regarding security in cyberspace, the SECONDO project in terms of Cyber Insurance will support professionals who seek cybersecurity investments, developed to support human decision making, and a complete well-founded security strategy. Moreover, SECONDO will provide services for smart security investments and cyber insurance pricing.

The consortium all this time has been active with virtual meetings and conferences among partners to deliver the best results.

Having reached the 41st month of the project, the consortium continues to work with all objectives and tasks as well as with all core elements in order to provide solid outcomes which are leading towards the completion of the project.

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PROJECT COORDINATION

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PROJECT DETAILS

Project number: 823997
Project Website: secondo-h2020.eu
Project start: 1st January 2019
Duration: 60 Months
Total cost: EUR 1 600 800
EC Contribution: EUR 1 600 800

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What's New!

The consortium has submitted the deliverable D4.3 “Cyber Security Investments” that models all possible cybersecurity attacks utilizing attack graphs, delivering the Game Theoretic Module (GTM) that has been proposed as an approach and is delivered as a tool, providing a list of proposed security controls. The aforementioned tool, has been evaluated against a real working environment.

D4.3 in details

The Game Theoretic Module, also known as GTM, that is delivered by the D4.3, integrates attack graphs to model and simulate all possible cybersecurity attacks that could happen in an organization's network topology. The used attack graph tool is the MulVAL that receives as input the output of vulnerability scanners. Then the GTM brain is responsible to calculate the cost and simulate attacks following the attack paths to optimally choose security controls that can effectively defend game theory and disorderly attackers.

More News..

Currently, the researchers are focusing on the deliverable D5.2 entitled “Cyber Insurance Policy Ontology”, which will deliver a report describing the SECONDO cyber insurance ontology, as well as on the deliverable D5.3 entitled “Decision Support for Cyber Insurance” presenting a tool that is responsible to calculate the price of the cyber insurance premium considering innovative security factors.

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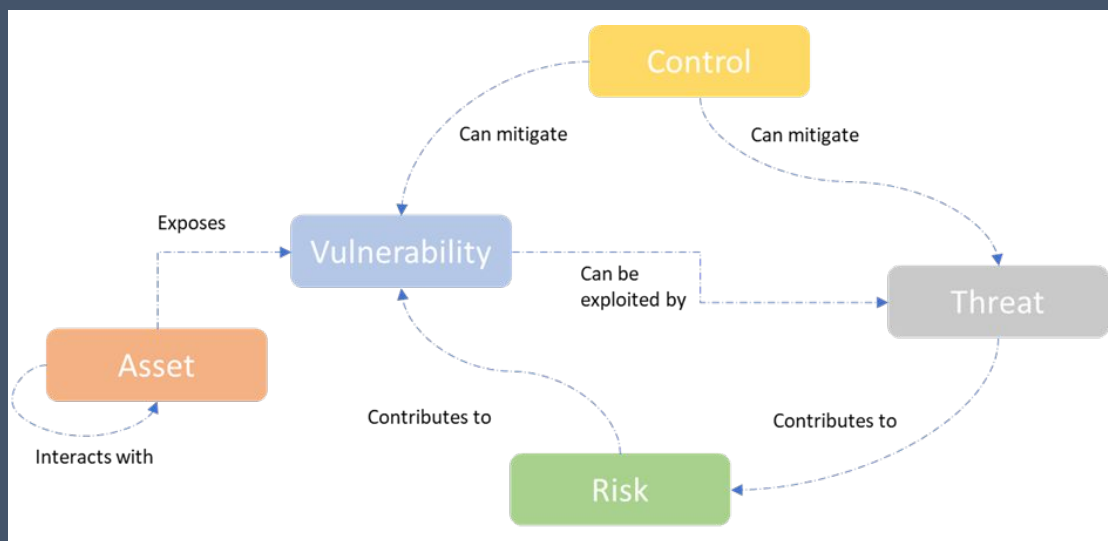


TASK 4.2 – Continuous Risk Monitoring and Blockchain

Overview of the adopted risk assessment concept

The risk assessment concept and the relationship between key elements of the risk assessment methodology of the Continuous Risk Monitoring Module CRMM, as well as a consistent terminology in use is depicted below.

The Assets are a key factor for a risk assessment process, as any risk quantification method is related to their exploitability. Each asset regardless of its nature (e.g., tangible or intangible), may entail several vulnerabilities.



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TASK 4.2 – Continuous Risk Monitoring and Blockchain

BLOCKCHAIN PUBLIC INTERFACES

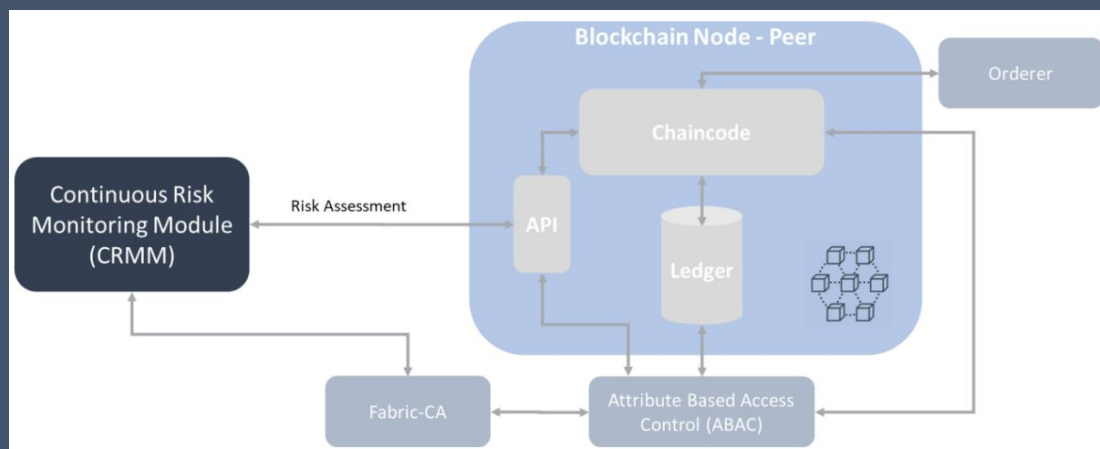
The blockchain API can be divided in the following components:

Create Risk Assessment Interface – This interface is a Google Remote Procedure Call (gRPC) API and is used to post the risk assessment report to the Blockchain. Registration to the Fabric-CA is a prerequisite step in order to generate the certificate that includes attributes for access control purposes.

PURPOSE: defining the interaction between the CRMM and the blockchain.

Read Risk Assessment Interface – This interface is a Restful API and is used for authorisation purposes since the Blockchain is permissioned.

PURPOSE: used to read a stored risk assessment entry through a gRPC to the blockchain.



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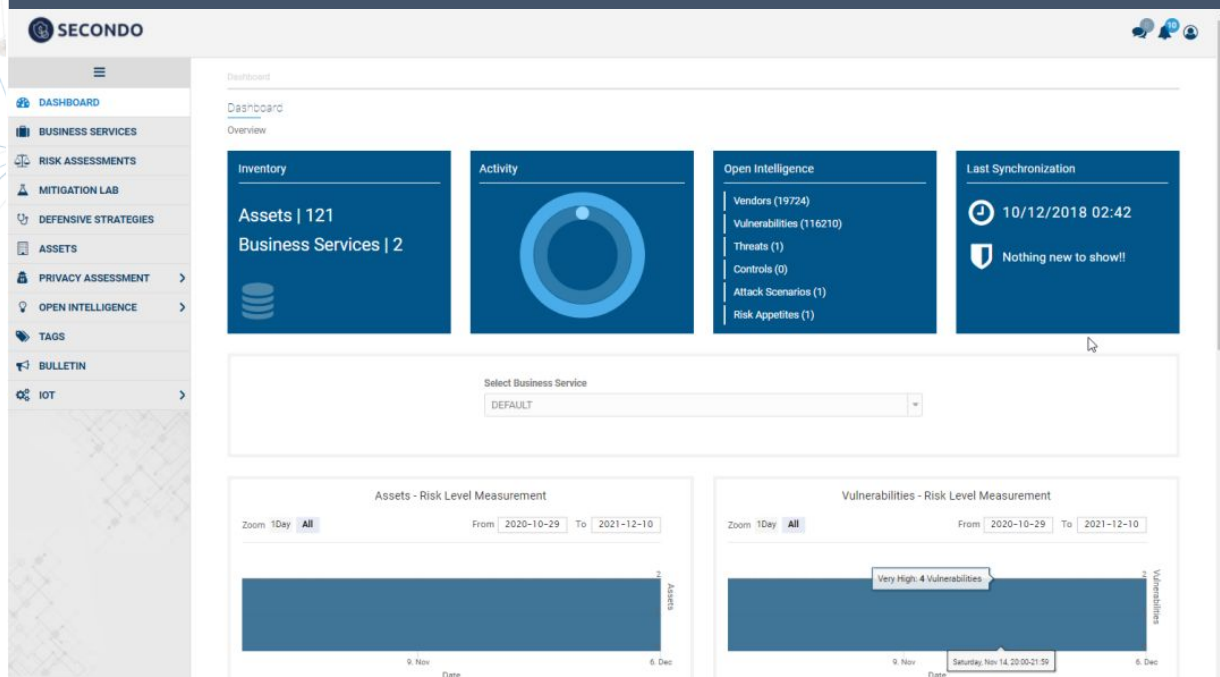
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TASK 4.2 – Continuous Risk Monitoring and Blockchain

Visualization of the adopted risk assessment concept

The figure below is the main screen upon login on the CRMM. The user can have an overview of some statistics such as the number of the Assets, the last Activity, the number of the Vulnerabilities and graphs with the Risk etc. This platform provides the user the opportunity to analyze assets, threat levels and attack scenarios using the OpenVAS vulnerability scanner to automatically identify vulnerabilities on the cyber assets and their connections; a tool that allows us to view the risk evaluation process in a fully detailed scope.



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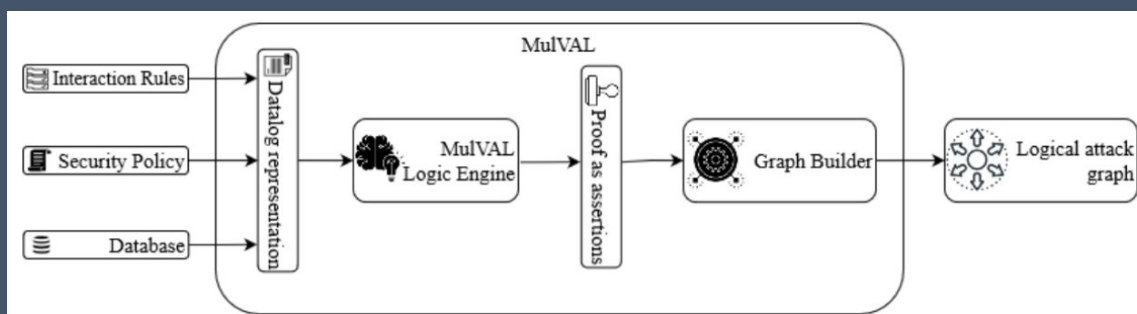
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TASK 4.3 – DECISION-MAKING FOR CYBER INVESTMENTS

The Game Theoretic Module (GTM) models all possible attacking scenarios and defensive strategies (i.e., available security controls), by employing attack graphs whilst also utilizing game-theoretic techniques to derive optimal defending strategies in the form of Nash Equilibria (NE).

GTM is part of the Cyber Security Investment Module (CSIM). The latter being empowered by a game-theoretic approach can derive optimal defense strategies in presence of adversaries that aim to cause maximum damage.



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IWAPS 2022



SECONDO, in partnership with other H2020 friend projects (SealedGRID, INCOGNITO, NetPHISH, ERATOSTHENES, Cyber Security for Europe, PHYSICS, EVOLVED-5G) will co-organize the 2nd International Workshop on Advances on Privacy-Preserving Technologies and Solutions ([IWAPS 2022](#)). The event will be held in conjunction with the 17th International Conference on Availability, Reliability, and Security on **23 – 26 of August**.

The [2022 IWAPS](#) will bring together researchers, engineers, and practitioners to present and discuss latest advances and innovations in theories, infrastructure, schemes, and applications for secure computation, privacy technologies, security economics, human computer interaction, as well as to identify emerging research topics and define the future trends.

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IWAPS 2022

The availability of massive amounts of data, coupled with high-performance cloud computing platforms, has driven significant progress in artificial intelligence and, in particular, machine learning and optimization. It has transformed into a fertile surface for cyber-attacks skyrocketing the cyber risk of involved industries and impacting several areas, including computer vision, natural language processing, transportation, trust computing, identity management and psychological manipulation.

This workshop aims to strengthen security and privacy through research and relevant activities in the models and design of secure, privacy-preserving and trust architectures, investments in cyber-defense, data analyses, fusion platforms, protocols, algorithms, services, and applications for next generation systems and solutions. We especially encourage security and privacy solutions that employ innovative machine learning techniques to tackle the issues of inspecting large data volumes, cyberattacks, and variety problems that are systemic in IoT platforms, theoretical and practical challenges related to the design of privacy-preserving AI systems and algorithms and will have strong multidisciplinary components, including soliciting contributions about policy, legal issues, and societal impact of privacy and affect the cyber risk of the participating entities.

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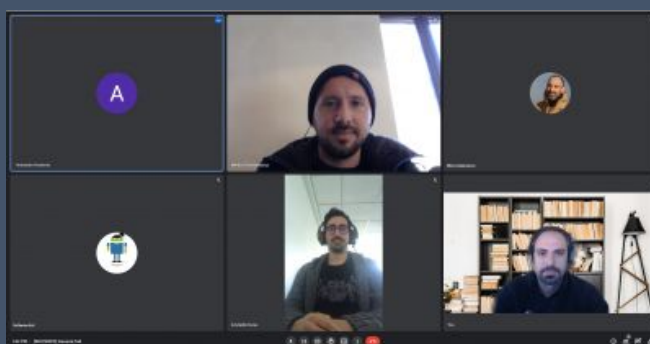
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SECONDO News

Virtual Meeting Among Researchers about SECONDO Project



Cyber Insurance: A New Business Trend

Anastasios Voudouris Has Completed his Secondment during SECONDO Project



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SECONDO News

SECONDO Co- Organizes IWAPS 2022



Research methodology Course on CSDP-EU as a Security and Defence Actor

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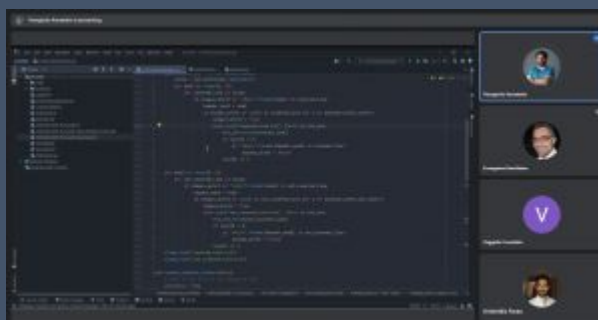


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SECONDO at the research methodology Course on CSDP

A virtual meeting among SECONDO Researchers



Update on SECONDO's IWAPS 2022 Co-Organization

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Future Activities

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

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

- **D5.2:** Cyber Insurance Policy Ontology
- **D5.3:** Decision Support for Cyber Insurance
- **D6.1:** Platform Integration
- **D7.2:** Dissemination and Standardisation Activities, Market Analysis and Exploitation Plan
- **D6.2:** Platform Assessment

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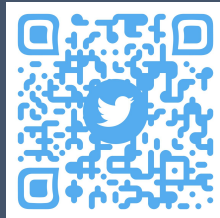


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