

WE INTRODUCE YOU TO THE ELEVENTH SECONDO NEWSLETTER!

We are pleased to present you the eleventh 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 45th 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
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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 D5.2 entitled “Cyber Insurance Policy Ontology”, which will deliver a report describing the SECONDO cyber insurance ontology that is responsible to analyze the coverages and exclusion provided by cyber-insurance contracts. Moreover, the deliverable D5.3 entitled “Decision Support for Cyber Insurance” submitted at the end of September 2022. This deliverable aims to deliver a tool that is responsible to calculate the price of the cyber insurance premium considering innovative security factors. It also utilises Smart Contracts to handle cybersecurity incidents.

More News...

Currently, the SECONDO researchers are focusing on the Deliverable D6.1 entitled “Platform Integration”. This deliverable will create the platform prototype. Prior to integration, the individual SECONDO modules will be extensively tested by running simulations to assess their functionality and performance. The integration platform represents the environment on which all the SECONDO modules will run.

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TASK 5.2

Cyber Insurance Policy Ontology

Knowing the big demand of cyber-insurance market for solutions that will safeguard the online businesses, we propose a prototype system for parsing cyber-insurance policies/contracts and extracting inclusions and exclusions, offering to the user a list of what is covered and what is not. In this way, the user will be able to easily compare several policies/contracts and to choose the one that fits he/she needs in a better way.

Approach

Our approach is able to deal with large collection of documents due to the simpler text parsing and keywords extracting method, therefore is scalable, time and memory efficiently. In detail, we parse the contract/ policy document and we extract the text that refers to the coverages and the text related to the exclusions. Then, using these two different texts as input, along with a generalized cyber-insurance terms ontology, we define which of the terms of the ontology are found in the coverages or in the exclusions. The final output of our approach is a table with the terms of the ontology and in indication whether this is covered or not by the specific policy. With this, we can also deal with the language problem, since the tool gets as input a manually created ontology file, that can be in any language and it matches the terms with the policy text in the same language.

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TASK 5.2

Cyber Insurance Policy Ontology

Architecture

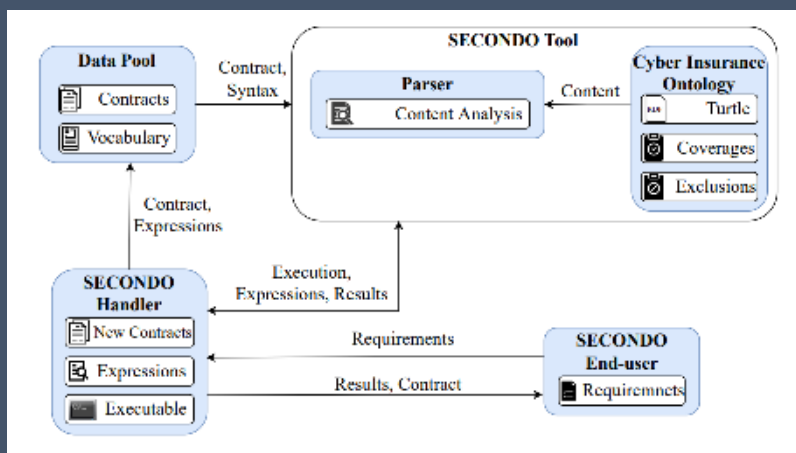
The general structure of our tool is divided into two discrete main sub-modules:

Parser :

responsible to receive the contract that will be under process and in the end discretely present the coverages and exclusion that the aforementioned contract bears with.

Cyber Insurance Ontology:

contains lists regarding the common coverages and exclusion that the majority of cyber insurance contracts bear with, as well as it contains the cyber insurance ontology.



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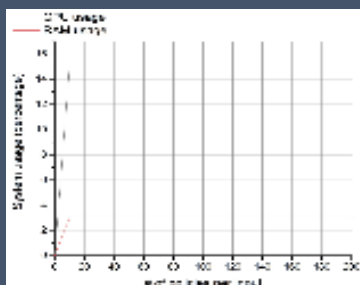
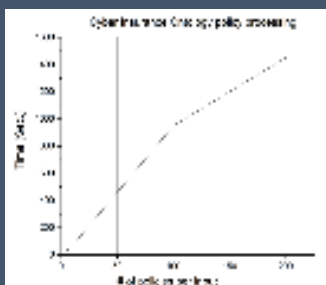


TASK 5.2

Cyber Insurance Policy Ontology

Performance Evaluation

Regarding performance, we evaluated it in terms of speed, resource consumption and scaling, we performed several tests using a different number of contracts - pdf files, of various size. The experiments have been conducted 5 times. In particular, the experiments contained input with 10, 20, 100 and 200 discrete policies. The first experiment contained 10 contracts, and the time that the proposed ontology needed to complete the analysis was 62 seconds. During the second experiment, we fed the ontology with 20 unique policies, which the SECONDO achieved to successfully process them in 165 seconds. Later, the ontology assessed against 100 contracts and 200 individual contracts, the ontology spent 950 and 1451 second respectively to process them. We can observe that the time needed by the ontology to process the input is relatively linear in relation to the number of contracts it analyzed. In addition, we have evaluated the resource depletion due to the ontology process. In terms of processing power, the program needed 15% CPU and 3% of the RAM regardless of the number of fields that feed the ontology. It occurs because our tool does not multi-process the policies, instead it processes one file per execution circle.



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IWAPS 2022

The 2nd International Workshop on Advances on Privacy Preserving Technologies and Solutions (IWAPS 2022) was successfully completed on 25/08/2022. This workshop aimed 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. The conference agenda included topics on keynote talks and sessions related to the Cybersecurity sector. Based on the rich agenda content, was given the opportunity for discussion on contemporary issues that concern everyday life business and individuals but also with a view from the future of technology.

There were 29 attendees, 8 papers were presented and 8 innovative cybersecurity projects were presented during the workshop.



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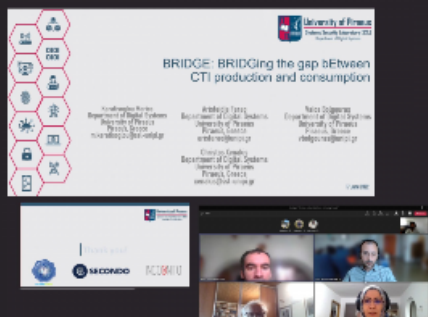
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[SECONDO presentation in the
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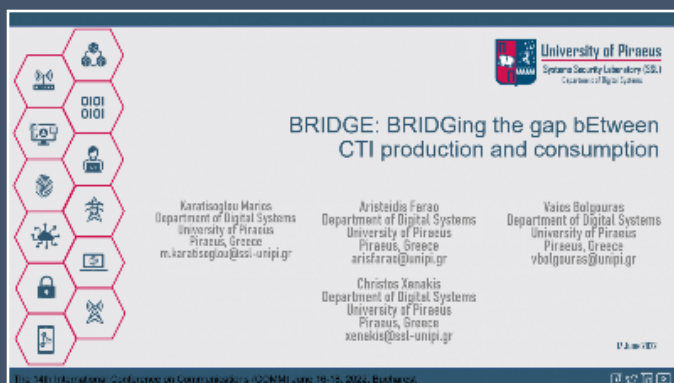
A Security ECONOMics service platform for smart security investments and cyber insurance pricing in the beyond 2020 networking era

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[SECONDO paper in ARES 2022](#)



[SECONDO project presentation in the 2nd IWAPS workshop](#)

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SECONDO publications

- Karatisoglou, M., Farao, A., Bolgouras, V. and Xenakis, C., 2022, June. BRIDGE: BRIDGing the gap bEtween CTI production and consumption. In 2022 14th International Conference on Communications (COMM) (pp. 1-6). IEEE.
- Charalambous, M., Farao, A., Kalantzantonakis, G., Kanakakis, P., Salamanos, N., Kotsifakos, E. and Froudakis, E., 2022, August. Analyzing Coverages of Cyber Insurance Policies Using Ontology. In Proceedings of the 17th International Conference on Availability, Reliability and Security (pp. 1-7).
- Ahmed, M., Panda, S., Xenakis, C., & Panaousis, E. (2022, August). MITRE ATT&CK-driven Cyber Risk Assessment. In Proceedings of the 17th International Conference on Availability, Reliability and Security (pp. 1-10).
- Kalderemidis, I., Farao, A., Bountakas, P., Panda, S. and Xenakis, C., 2022, August. GTM: Game Theoretic Methodology for optimal cybersecurity defending strategies and investments. In Proceedings of the 17th International Conference on Availability, Reliability and Security (pp. 1-9).

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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:

- D6.1: Platform Integration
- D1.6: Progress Report 3
- D6.2: Platform Assessment
- D7.2: Dissemination and Standardisation Activities, Market Analysis and Exploitation Plan

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