



# Introduction

## Welcome to the second CYBECO Newsletter!

The CYBECO project is a collaboration between seven European institutions and it is funded by the EU's H2020 RIA programme with two million Euros for two years.

During the first 12 months of the implementation of CYBECO project the CYBECO team has worked on different tasks that will lead to the achievement of the project's objectives.

More specifically, the CYBECO modelling framework for cybersecurity risk management has been developed, moving beyond standard cybersecurity frameworks by taking into account the

intentionality of certain cyber threats.

Furthermore, use-cases representative of the global cyber-insurance ecosystem – also presented and described within the CYBECO project – have been defined in order to better understand and analyze the interactions between the parties in the cyber-insurance process. The defined use-cases provide the basis for more in-depth cyber-insurance scenarios.

In the frame of the project's behavioural experiments, the design of the experiments has been finalised, along with the software for the conduction of the 1st experiment. The 1st experiment aims at testing the CYBECO model from a behavioural-

experimental viewpoint by comparing the “rational optimal” behaviour forecasted by the CYBECO model with the “human actual behaviour” when purchasing cyber protection and insurance.

Based on the above, the CYBECO team has described the methodology and design principles of the CYBECO Toolbox which will be finalised within the next period.

Last but not least, during this period, CYBECO has initiated the implementation of the project's dissemination and communication campaign, as well as contacts and collaborations with other like-minded projects.

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***CYBECO will analyse cybersecurity risks to advise major organisations in the selection of security countermeasures and cyber insurance.***

# CYBECO Events & Talks

## 3rd Plenary Meeting, Paris

The 3rd Plenary Meeting of the CYBECO took place in Paris, on March 15-16, 2018. AXA hosted the meeting while representatives from all CYBECO partners participated in it.

Furthermore, Professor Ahmed Bonfour, the scientific director of HERMENEUT project joined the meeting in the frame of enhancing cooperation of the two project and of examining potential areas of collaboration.



The general objective of the meeting was to assess the project progress for the first 12 months with regards to the modelling framework, the use-cases and scenarios, the behavioural experiments, the cybersecurity ecosystems and the design of the CYBECO Toolbox.

The meeting concluded with the update and the confirmation of the work plan for the next and last year of the CYBECO project.

## CYBER AWARE Industry Form

Professor Pamela Briggs, member of the CYBECO project team, talked about "Personal Threats in the Digital Identity Landscape" and discussed the CYBECO project work during the CYBER AWARE Industry Forum, which took place on the 27th of February, 2018.

CYBER AWARE ([www.cyberaware.gov.uk](http://www.cyberaware.gov.uk)) is a UK government's campaign which is all about discovering how citizens and their business can be secure online.

## OECD Cyberinsurance Event

On February 22-23, 2018 in Paris, OECD and Marsh & McLennan Companies organized the event "Unleashing the potential of the cyber insurance market". Dr. Kate Labunets of CYBECO was there and discussed with key players the latest challenges and developments in the cyberinsurance market.



## CYBECO at SAINT project workshop, Athens

Aitor Couce Vieira from the CYBECO team presented the CYBECO project in the 1st SAINT workshop that took place on March 20, 2018, in Athens. The event aimed at enhancing clustering and networking for Cyber Security projects and it was hosted by the NCSR "Demokritos" in Athens. It brought together several EU cyber security and privacy related projects, exchanging knowledge and ideas and promoting inter-project collaboration. More than 40 participants from ENISA, SAINT, CYBECO, SISSDEN, ANASTACIA, KONFIDO, SHIELD, DOGANA, CIPSEC, SMESEC, and RECREED projects attended the workshop and participated in constructive and insightful discussions for current and future approaches, methods and solutions related to Cyber Crime and Cyber Security.



# CYBECO on the News

## CYBERWATCHING.EU Concentration Meeting

In the frame of the CYBECO project participation to the first concentration meeting for Unit H1 which took place in Brussels, on April 26, 2018, the following position paper was published in the respective Catalogue of Projects:

“Cyberinsurance can fulfill a key role in improving cyber-security within companies by providing incentives for them to improve their security, requiring certain minimum protection standards. Unfortunately, so far cyber-insurance has not been widely adopted. CYBECO focuses on two aspects to fill this gap: (1) Including cyber-threat behaviour through adversarial risk analysis to support insurance companies in estimating risks and setting premiums as well as (2) using behavioural experiments to improve IT owners’ cyber-security decisions. We thus facilitate risk-based cyber-security investments and progress beyond information security economic models, supporting insurers in their cyber offerings through a risk management modelling framework and tool. CYBECO includes a detailed analysis of the cyberinsurance (and cybersecurity) ecosystem as well an exploitation plan. We identify the following markets:

Supply side:

- Insurance companies aimed at providing improved cyberinsurance products.
- Associated with them, insurance brokers and reinsurers.
- Cyber security and consulting companies that could include well-calibrated cyber insurance products within their portfolios.



Demand side:

- Owners of IT installations whose organizations critically depend on it, including SMEs, large companies, public administrations and, in the not so distant future, individuals insuring their home installations.

In short, we aim at making society more cybersecure. Last, but not least, researchers in various areas (technology management, IT security, insurance, risk analysis, behavioural economics, cyber-psychology) would also benefit from our advances.

On the supply side, end-users benefit from better founded and designed cyberinsurance products and cyber risk management frameworks. On the demand side, end-users

benefit from a well-founded tool that allows them to determine their optimal cyber security investments, including the appropriate cyber insurance product. Globally, society as whole benefits since the project helps create a more secure environment. In a nutshell, by properly modelling and combining decision-making behaviour surrounding cyber threats (risk generation), the decision-making behaviour of insurance companies (risk assessment) and the decision-making behaviour of IT owners (which includes cyber insurance), we aim to help mitigate cyber risks at the global level.

Results of CYBECO up to date are the following:

- A model that facilitates the best portfolio of cybersecurity investments, including cyberinsurance, together with a case study that serves as template for complex studies.
- Other risk management models for cyber insurance decisions (cyber reinsurance and granting an insurance product).
- Several case studies to evaluate the methodology.
- A skeleton of a tool to facilitate implementing the above models.
- A study of the cyber insurance ecosystem to identify policy gaps and how our framework may be better applied within such ecosystem.”



# Cyberinsurance & Cybersecurity Events

## WEIS 2018

The Workshop on the Economics of Information Security (WEIS) is the leading forum for interdisciplinary scholarship on information security and privacy, combining expertise from the fields of economics, social science, business, law, policy, and computer science.

WEIS 2018 will be hosted by the University of Innsbruck, Austria, on June 18-19, 2018. Cyberinsurance is among the workshop's suggested topics.

## 29th European Conference on Operational Research

The European Conference on Operational Research (EURO 2018) is the most important conference for Operational Research and Management Science (OR/MS) in Europe organized by EURO - the European Association of Operational Research Society and the Spanish Statistics and Operations Research Society. It will be held by the two major Valencian universities, Universitat de València and Universitat Politècnica de València, in Valencia, Spain, on July 8-11, 2018.

DEVSTAT, partner of the CYBECO project, will organise a session in the conference titled "CYBECO

session on cybersecurity and cyberinsurance" and will examine and accept submissions of relevant papers to be presented during this session.

## Copenhagen Cyber Crime Conference

As the cyber security field continues to grow in importance and influence, the Copenhagen Cybercrime Conference plays an integral role in keeping security professionals connected and educated. The Copenhagen Cybercrime Conference will take place on June 7, 2018. It has for 5 years been the premier cyber security event in north-western Europe driven by knowledge sharing (rather than vendors and their sales pitches).

The conference provides participants with the opportunity to meet and network with regional and international cyber security practitioners. It is 100% focused on knowledge sharing and original ideas drawn from real-world situations.

## CYBERCON Conference 2018

The 2018 CyberCon conference focuses on the topics cybersecurity, smart cities and critical infrastructure and it will be held in Sofia, Bulgaria, on June 15-16, 2018, under the patronage of the European Commissioner Economy and

Society - Mrs. Mariya Gabriel.

The general objective of the event is to support the integration and interaction between private and public bodies with experts in cybersecurity, critical infrastructure management, eHealth and Smart Cities solution providers.

## 2018 International Workshop on Cyber Insurance and Risk Controls (CIRC)

The International Workshop on Cyber Insurance and Risk Controls (CIRC 2018) is a workshop organised and sponsored by the University of Oxford. It is co-located as part of the IEEE technically co-sponsored (TCS) CyberSA 2018 conference. Topics of interest include, but are not limited to the following:

- Cyber Insurance
- Cyber Risk Assessment
- Cyber Risk Propagation
- Security Controls and Standards
- Cybersecurity Metrics and their Measurements
- Maturity Models and Frameworks
- Cyber Value-at-Risk (CVaR)
- Cyber Economics
- Cyber Harm

# CYBECO Partners

The project is a collaboration between seven European institutions, namely TREK Development S.A. from Greece, Instituto de Ciencias Matemáticas (ICMAT - CSIC) from Spain, Intrasoft International S.A. (INTRASOFT) from Luxembourg, Devstat Servicios de Consultoría Estadística S.L. (DEVSTAT) from Spain, AXA Technology Services (AXA) from France, Technische Universiteit Delft (TU DELFT) from Netherlands and the University of Northumbria at Newcastle (UNN) from the United Kingdom.

CYBECO partners combine different types of expertise in the fields of mathematics, risk management, behavioural sciences, software engineering and technology policy.



**TREK DEVELOPMENT SA, Greece**



**AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS - INSTITUTO DE CIENCIAS MATEMÁTICAS, Spain**



**INTRASOFT International SA, Luxembourg**



**DEVSTAT SERVICIOS DE CONSULTORIA ESTADISTICA SL, Spain**



**AXA TECHNOLOGY SERVICES, France**



**TECHNISCHE UNIVERSITEIT DELFT, Netherlands**



**UNIVERSITY OF NORTHUMBRIA AT NEWCASTLE, United Kingdom**

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