FISHY liaisons and collaborations

In the lifetime of FISHY, the consortium has put much focus on exploring intersecting ideas through the collaboration with other European initiatives, in particular with projects of the same research and innovation nature as ours. FISHY has established very fruitful collaborations and liaisons during these 3 years of project. The collaborations have basically been of three types: workshops co-organization, participation in workshops organized by other EU projects, and also specific collaborations.

During the first year one of the FISHY main achievement was the second FISHY workshop co-organized with the EU projects C4IIoT[i], COLLABS[ii], and CyberSANE[iii] and in conjunction with the 16th International Conference on Availability, Reliability and Security (ARES 2021)[iv]. This workshop was held on August 17, 2021, and the aim of the first International Workshop on Secure and resilient smart manufacturing environments (SecRS) was to bring together researchers; practitioners, industrial stakeholders, and security professionals, to discuss challenges and opportunities in addressing the security, resilience, accountability and trustworthiness requirements of IIoT, collaborative manufacturing and industrial supply chains.

Following the idea of co-organizing workshops, during the second year of FISHY, the 1st International Workshop on Key challenges in global cybersecurity: Efforts and trends in EU (KCYEU) was organized jointly with CYRENE[v] and IoTAC[vi], co-located with the DRCN 2022 conference[vii]. The main focus of the workshop was to track current research in cybersecurity, especially in the fields of IoT and supply chain but also open to other cybersecurity research areas.

Also, during the second year of FISHY, the consortium attended different EU events:
- Work-in-progress presented in the EuroCybersec2021 workshop[viii] organized by the EU project IoTAC: A Machine Learning IDS for Known and Unknown Anomalies, presented by Francesc Aguilo from UPC.
- Clustering workshop, December 13, 2021 Future Proofing and Certifying Supply Chains[ix] organized by the EU projects ASSURED[x] and CYRENE[v].
- On Friday April 8, 2022, FISHY participated in the roundtable "The Need for IoT Security Standardization & Certification"[xi], with the participation of EU projects: CONCORDIA[xii], IoTAC[vi], CYRENE[v], BIECO[xiii] and NGIoT[xiv]. Henrique Santos from University of MINHO presented "The Role of Certification to Leverage Trust level in IoT-based Supply Chains: the FISHY vision"

Beside these EU events FISHY was included in the ECSO Cybersecurity Awareness Calendar in June 2022[xv], and included in the SWForum.eu hub and promoted in July 2022[xvi] .

Finally, during the last year of FISHY the maturity of the project and also of the liaisons have made possible collaborations of greater depth. The main achievements of this last year have been:
- Joint infographic FISHY-CYRENE used in the Barcelona cybersecurity congress and on social media. Both projects aim to offer a solution for the cybersecurity of interconnected supply chains (see Figure 1).
- FISHY has participated in the Cybersecurity congress. The FISHY participation in the Cybersecurity Congress was in the framework of the European Research Innovation for Cybersecurity (ERICyb) cluster composed of six other EU Projects. The seven projects participating in the exhibition were: ASSURED[X], BIECO[XIII], CYRENE[5], FISHY, IoTAC[VI], SANCUS[xvii] and SIFIS-HOME[xviii]. The cluster decided to schedule joint presentations each day at 11h and 15h. In these joint presentations with 5 min for each project, the projects demonstrated the state-of-the-art research results in various technical fields of cybersecurity, more

specifically IoT security, and how they contribute to the protection of supply chains.

Thanks to these presentations the project team managed to, on one hand, receive feedback from the other projects in the booth, discovering synergies and research collaborations; and on the other hand, getting insights from people external to the cluster of projects.
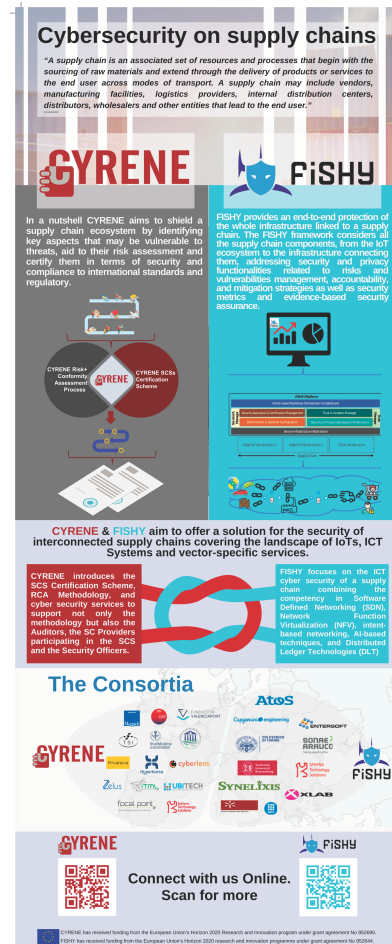

Figure 1. CYRENE-FISHY infographic

- 4th FISHY workshop in April 2023 organized with EU-funded projects JCOP[xix], PHOENI2X[xx] and IntellioT[xxi].
- Conference paper "Incident Handling for Healthcare Organizations and Supply-Chains" done in collaboration with AI4HEALTHSEC[xxii], CONCORDIA[XII] and ASCAPE[xxiii].
- Conference paper "A data infrastructure for heterogeneous telemetry adaptation. Application to Netflow-based cryptojacking detection" with PALANTIR[xxiv].
- Conference paper "Security in DevSecOps: Applying Tools and Machine Learning to Verification and Monitoring Steps" with PIACERE[xxv], MEDINA[xxvi], ICOS[xxvii], SUNRISE[xxviii] and CYLCOMED[xxix].
- Conference paper "Runtime Security Monitoring by an Interplay Between Rule Matching and Deep Learning-Based Anomaly Detection on Logs" with PIACERE[XXIII] and MEDINA[XXIV].

In total, the number of joint activities during the 3 years of project have been 10, sumarized in Table below, and the outcomes of these so far are at least 5 papers (1 journal and 4 conference papers) have been published with acknowledgment to more than one EU-funded projects.

Liaison Activities
UPC and ATOS collaborated in the Open Pilot Stream of CYBERWISER. 3 UPC master students participated in SQL injection, password cracking, phishing and Firewall and Network Filtering online courses in January 2021.
The second FISHY workshop has been held on August 17, 2021, and it has been co-organized with the C4IIoT, COLLABS and CyberSANE and in conjunction with the 16th International Conference on Availability, Reliability and Security (ARES 2021).
FISHY participated in the Clustering workshop, December 13,2021 Future Proofing and Certifying Supply Chains organized by the EU projects ASSURED and CYRENE.
On Friday April 8, 2022, FISHY participated in the roundtable "The Need for IoT Security Standardization & Certification", with the participation of EU projects: CONCORDIA, IoTAC, CYRENE, BIECO and NGIoT. Henrique Santos from University of Minho presented "The Role of Certification to Leverage Trust level in IoT-based Supply Chains: the FISHY vision",
3rd FISHY workshop: On March 28,2022, FISHY organized the 1st International Workshop on Key challenges in global cybersecurity: Efforts and trends in EU (KCYEU) organized jointly with H2020 CYRENE and H2020 IoTAC, co-located with the DRCN2022 conference.
ATOS liaised with ECSO so that FISHY is featured in ECSO Cybersecurity Awareness Calendar, June 2022 edition as well as the collaboration with CSA Action SWForum.eu to boost the promotion of FISHY results.
FISHY has been included in the SWForum.eu hub in their project radar initiative; and it has been especially promoted during July 2022.
Joint infographic FISHY-CYRENE used in the Barcelona Cybersecurity Congress and in social media.
FISHY has co-organized and participated in the Cybersecurity congress as part of the European Research Innovation for Cybersecurity (ERICyb) cluster, held in Barcelona, January 31st - February 2nd, with 6 more EU-funded projects.
4th FISHY workshop in April 2023 organized with EU-funded projects JCOP, PHOENI2X and IntelIIoT.

[i] https://www.c4iiot.eu/en/
[ii] https://www.collabs-project.eu/
[iii] https://www.cybersane-project.eu/
[iv] https://2021.ares-conference.eu/index.html
[v] https://www.cyrene.eu/
[vi] https://iotac.eu/about-us/
[vii] https://myevent.upc.edu/65183/detail/drcn-2022.html

viii https://iotac.eu/eurocybersec2021-workshop/

ix https://www.cyrene.eu/future-proofing-and-certifying-supply-chains-clustering-workshop/

x https://assured-project.eu/

xi https://iotac.eu/roundtable-the-need-for-iot-security-standards-and-certifications/

xii https://www.concordia-h2020.eu/

xiii https://www.bieco.org/

xiv https://www.ngiot.eu/

xv https://ecs-org.eu/ecso-uploads/2022/12/JUNE-Edition-Awareness-Calendar.pdf

xvi https://swforum.eu/project-hub/coordinated-framework-cyber-resilient-supply-chain-systems-over-complex-ict-0

xvii https://sancus-project.eu/

xviii https://www.sifis-home.eu/

xix https://jcop.eu/

xx https://phoenix-h2020.eu/

xxi https://intelliot.eu/

xxii https://www.ai4healthsec.eu

xxiii https://ascape-project.eu/artificial-intelligence-supporting-cancer-patients-across-europe

xxiv https://www.palantir-project.eu/

xxv https://piacere-project.eu/

xxvi https://medina-project.eu/

xxvii https://www.icos-project.eu/

xxviii https://sunrise-project.eu/

xxix https://www.cylcomed.eu/