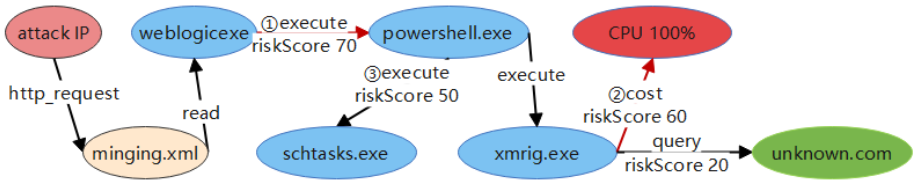
Open Challenges Proposal

Call Identifier: OCF-OC1-Challenge5

Challenge: New Paradigm for Constructing Unified Data Traceability Graphs.

Background: The intensification of advanced and unknown threats necessitates the construction of a new paradigm for cybersecurity based on a unified data provenance graph.



Technical Challenge: The research aims to develop a new paradigm that unifies rule engines and data-driven approaches, and apply it to the field of comprehensive threat detection. A unified rule and data-driven scalable AI framework, overcoming the limitations of existing methods in maintainability and scalability, and providing an iterative theoretical framework for dynamic threat detection.

Main Objectives: Develop a Unified Graph Neural Network Architecture that supports:

- Given existing rules and attack data, input new attack data to automatically recommend new rules based on global optimization.
- Real-time online streaming graph AI inference supports advanced ransomware, mining, trojans, and fileless attacks.

Deliverables: Publication

Duration: 6 Months

Available Funding: 60k€

Sponsor: Huawei – Jiao Lijuan (jiaolijuan@huawei.com)