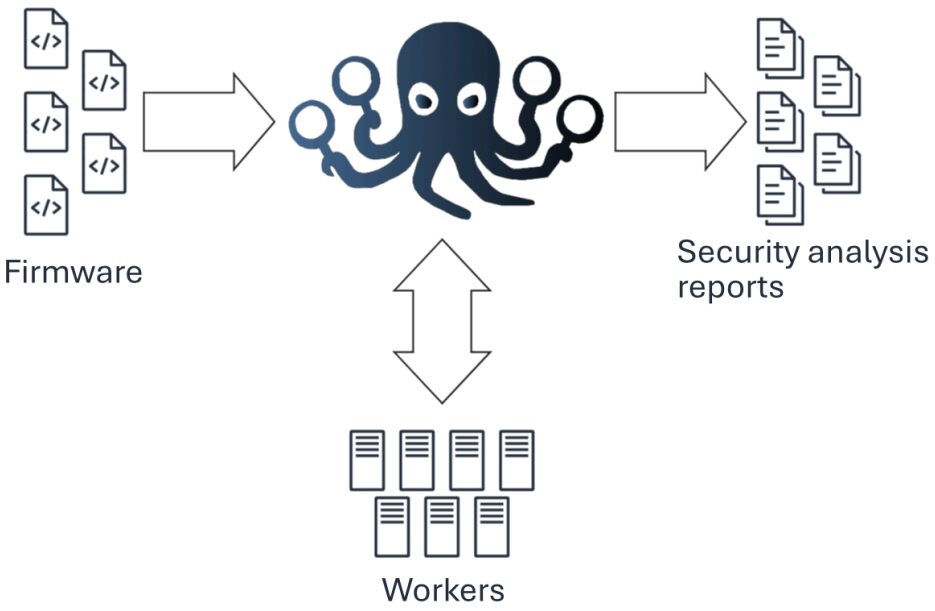
AMOS Project SS25 # EMBArk Orchestrator

Project name	EMBArk Orchestration Framework
Project mission	The mission of this project is to develop a functional orchestration component for EMBArk that enables scalable and automated execution of firmware analysis tasks using the existing EMBA tooling. The MVP will support managing distributed Ubuntu workers via SSH, provide an API interface for job creation, and enable testers to manage worker nodes through a web-based dashboard. Key deliverables include job scheduling, worker management, result collection, and system monitoring features.
Industry partner	Siemens Energy
Team logo	
Project summary	The existing EMBA/EMBArk suite has been made enterprise-ready by extending its parallel analysis capabilities and adding an API for integration into automated workflows. Firmware analysis tasks can now effortlessly be distributed to various worker nodes. A special focus has been laid on convenient worker lifecycle management and a high level of security. After an initial operating system setup, EMBArk takes over. Worker management requires no more direct user interaction and can be scaled flexibly. Security is ensured by managing the workers via a key-based SSH connection and allowing them to be completely offline apart from the connection to the EMBArk host.

Project illustration	
Team photo	
Project repository	https://github.com/amosproj/amos2025ss01-embark