

# DECODER

## DEVELOPER COMPANION FOR DOCUMENTED AND ANNOTATED CODE REFERENCE

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Software drives our modern economy; it is present everywhere, from critical infrastructures supporting societies, such as energy supply and transportation, down to the smart devices connecting us to the Internet. Software development continues to be expensive due to the ever-increasing complexity of computing systems and stakeholders' needs across the entire software development cycle.

The EU-funded H2020 project DECODER, coordinated by Technikon, provides a platform that gathers a comprehensive knowledge base about a particular software project, allowing to perform a variety of requests about this information. This knowledge base, called the Persistent Knowledge Monitor (PKM) - states Lisa Burgstaller-Hochenwarter, project manager at Technikon - is accessible through an easy-to-use Graphical User Interface. Through NLP (Natural Language Processing) technologies, formal methods, a newly designed language called ASFM, and through innovative AI and machine learning techniques, the PKM helps DevSecOps teams from all over the world to achieve greater efficiency throughout the application lifecycle, enhancing code understanding, readability, reuse, compliance and security.

To guarantee sustainability beyond the project end, the DECODER platform has recently joined the OW2 open source code base, where it is managed by the CEA List LSL laboratory (software security and safety laboratory) located in Paris-Saclay, France. The OW2 infrastructure and collaborative development environment

enables future enrichment of the DECODER platform for other open source developers (members of the OW2 community). Indeed, extensions of the DECODER platform could form the subject of future collaborative projects.

From January 2019 to December 2021, seven European contributors were involved in the design of the DECODER platform: one research organisation (CEA List as technical lead), one university (Universitat Politècnica de València), two industrial partners (Cappgemini, Sysgo), two SMEs (Technikon as project coordinator, and Tree Technology) and OW2 as a non-profit organisation. DECODER was presented at various open-source events, where it attracted vivid interest by software developers' who recognise the multitude of benefits.

All DECODER results including public deliverables and links to the DECODER software are available on the public project website: [www.decoder-project.eu](http://www.decoder-project.eu)

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