ETSI IoT Week 2022

Software Security by Design (SSD) Platform

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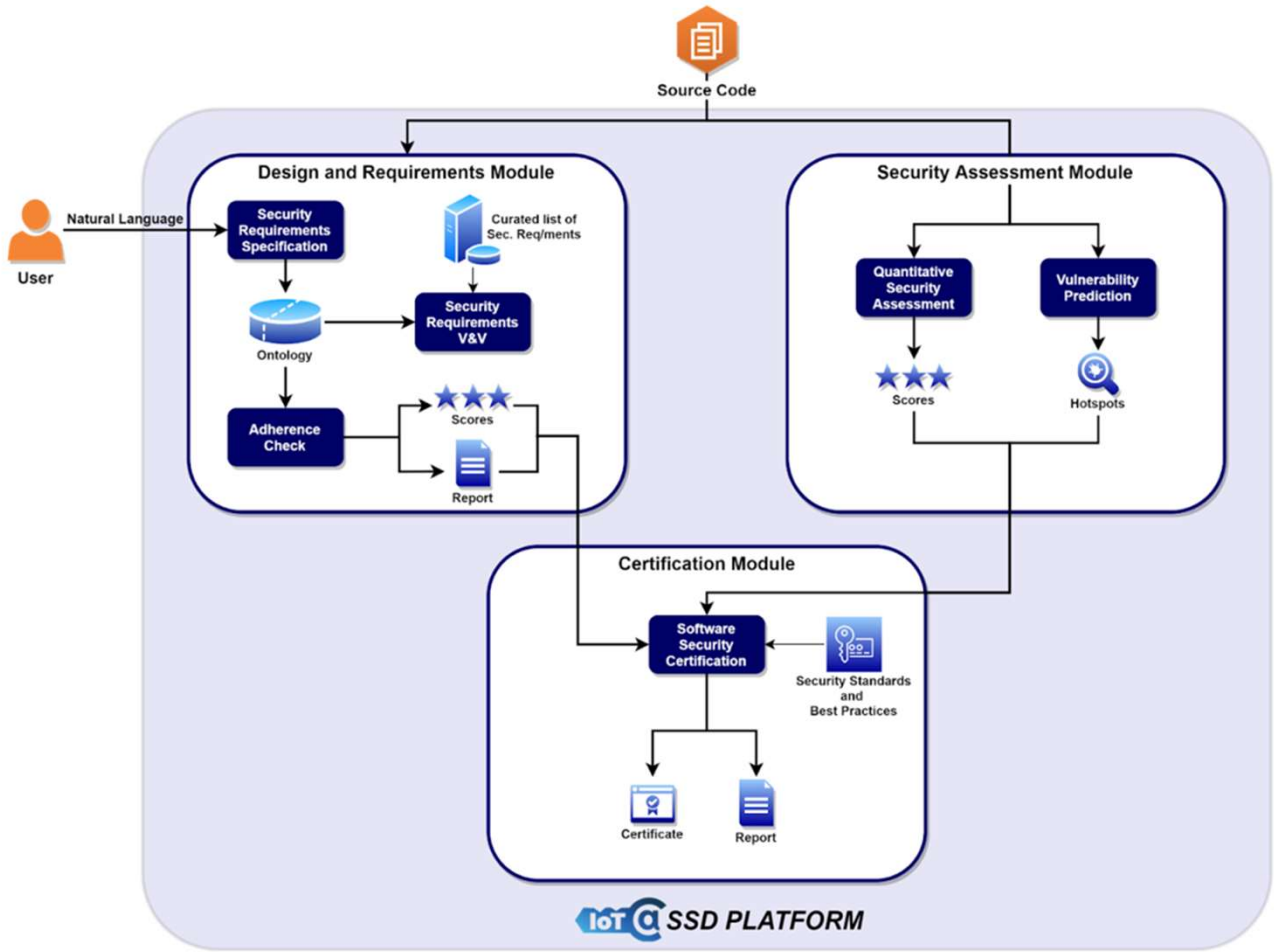
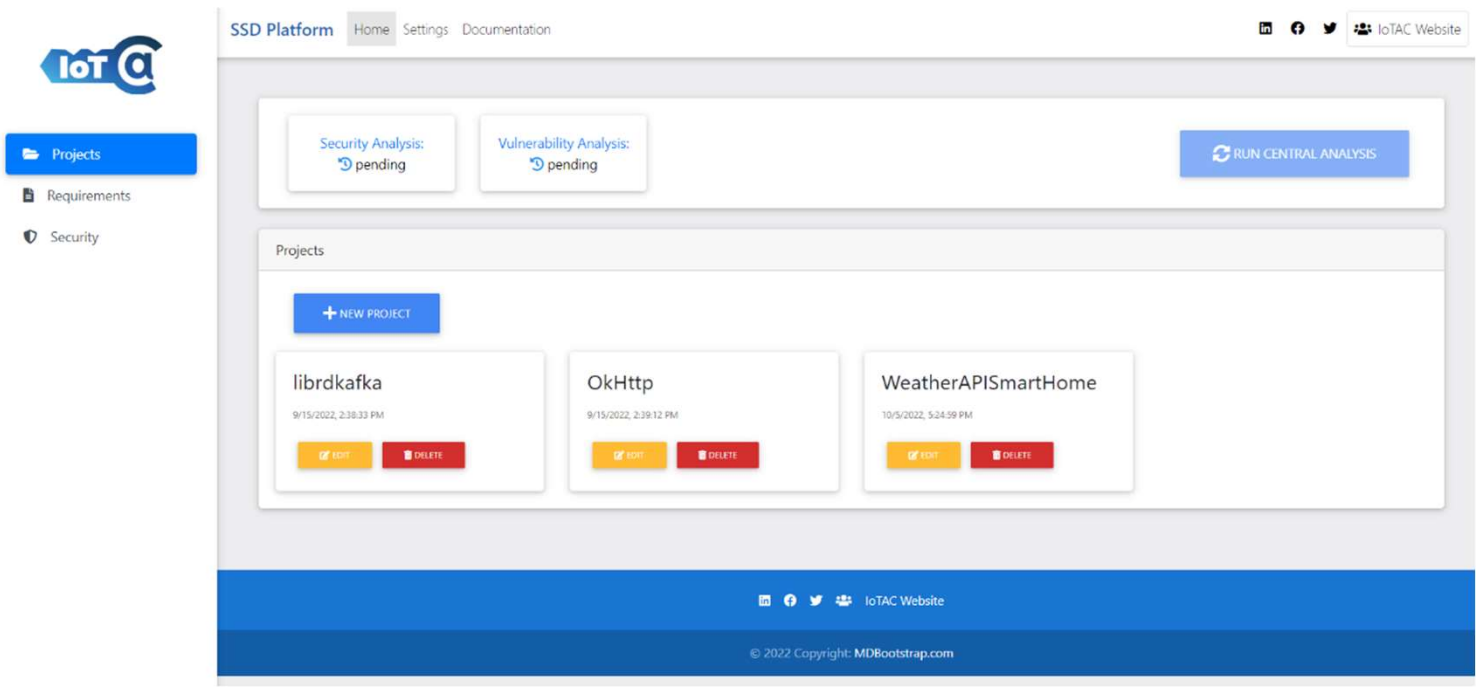
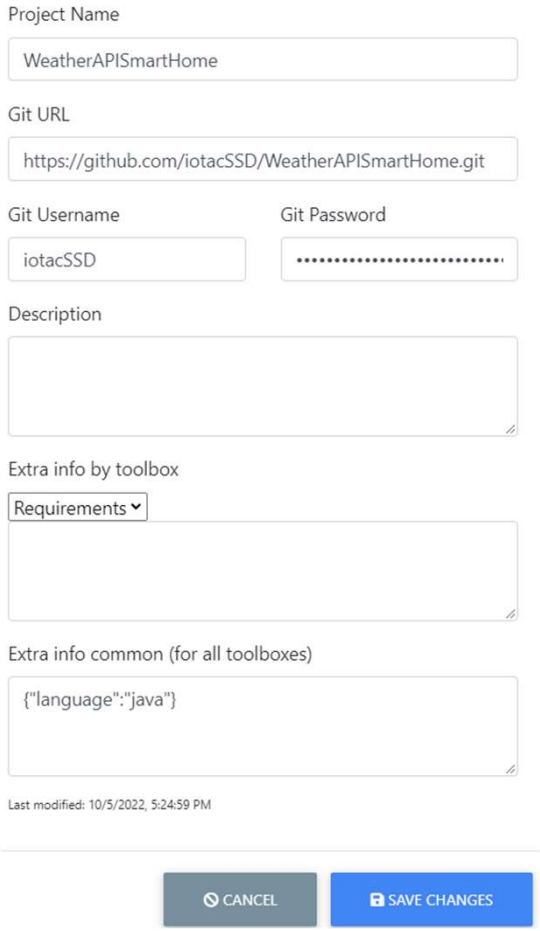
IoTAC: Security by Design IoT Development and Certificate Framework with Front-end Access Control (Horizon 2020)

Three core parts of the SSD:

1. Design & Requirements Module
2. Security Assessment Module
3. Validation/Certification Module (in a future version)







Users can select:

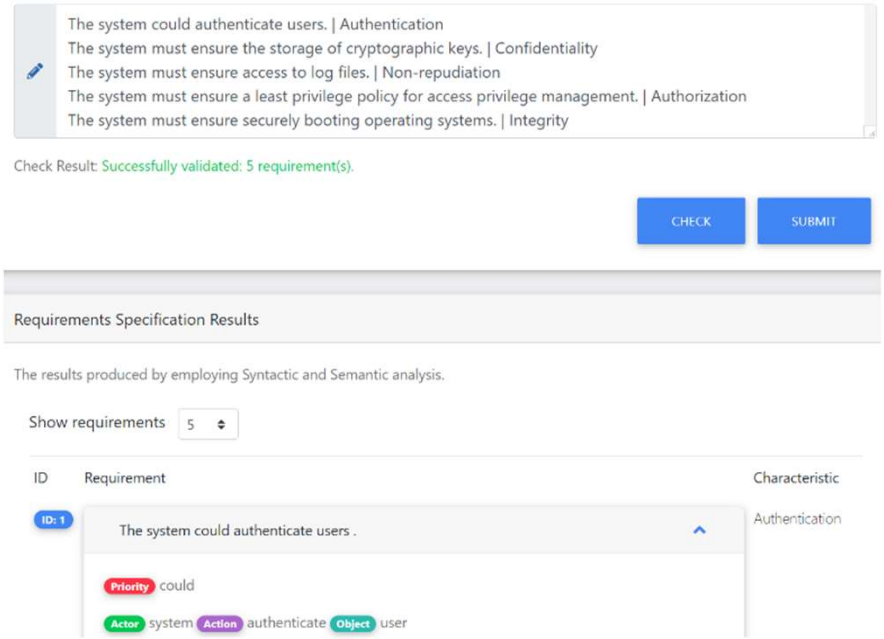
- Add new project
- Go to the Requirements page
- Run central analysis
- View the security results

User input:

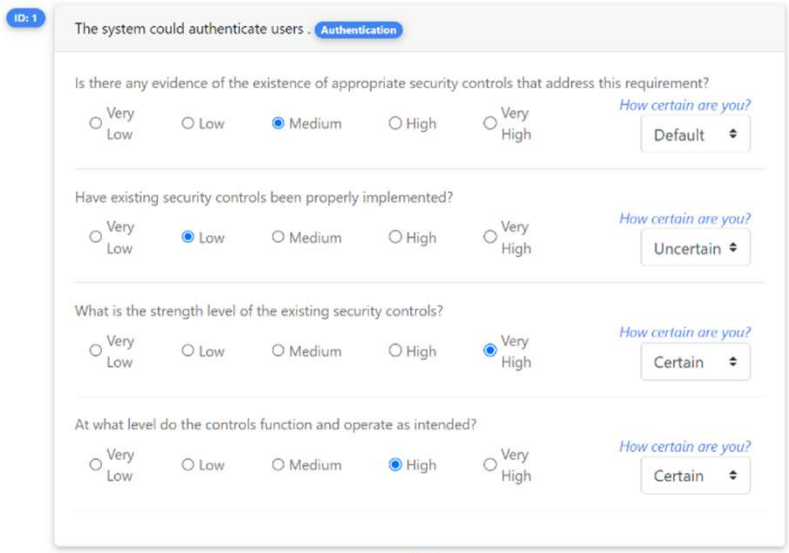
- Project name
- Project Git url
- Project language
- Basic Authentication credentials (if private repository)

Requirements Module

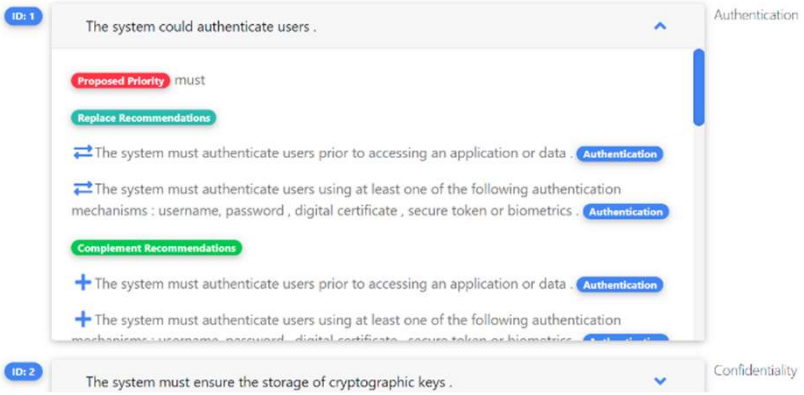
Specification: Insert, submit requirements and view results



Adherence Check: Questionnaire for experts to check the adherence of the requirements



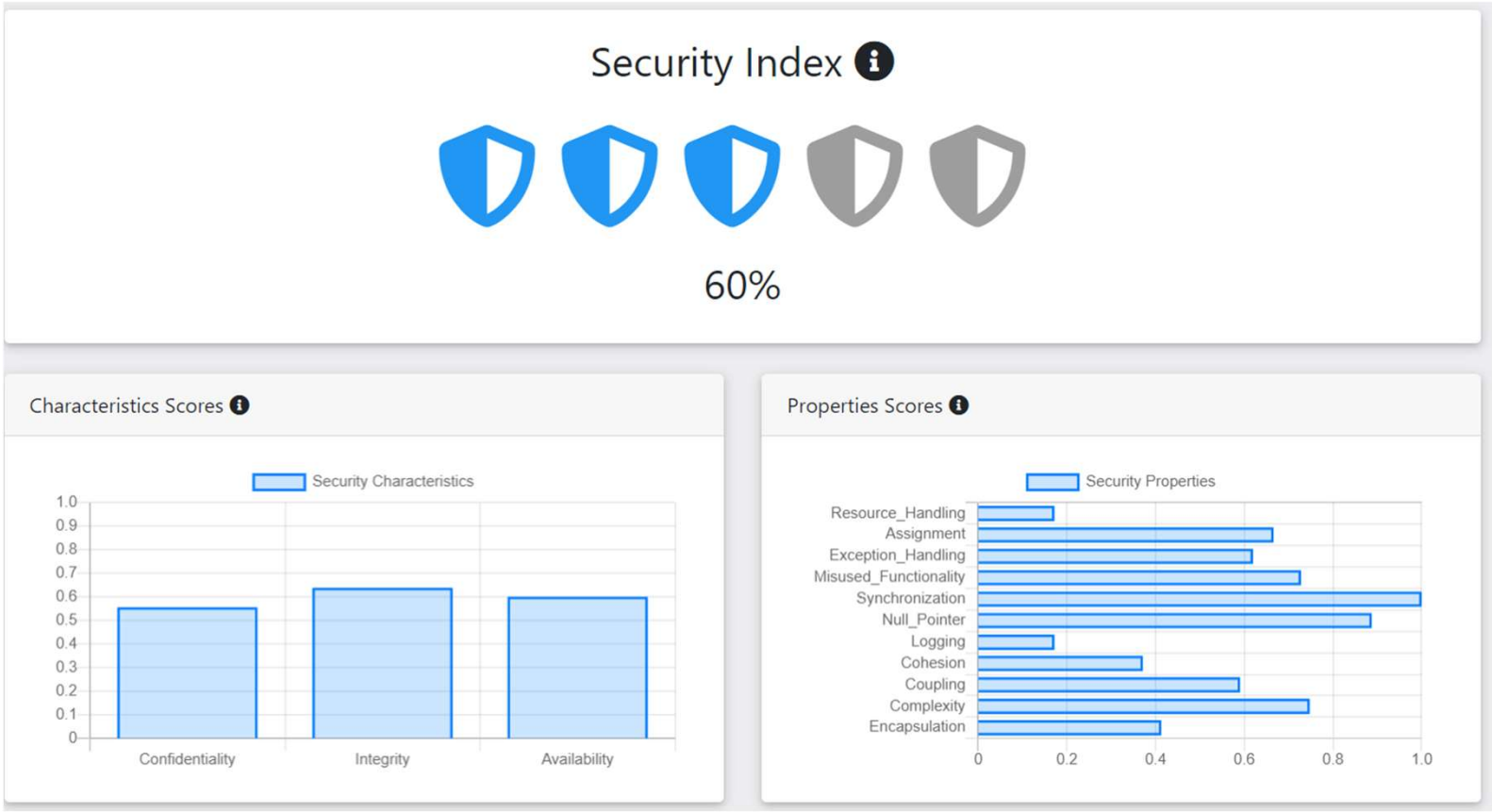
V&V: Recommendations for edit or complement



Quantitative Security Assessment

A Static Analysis-based tool

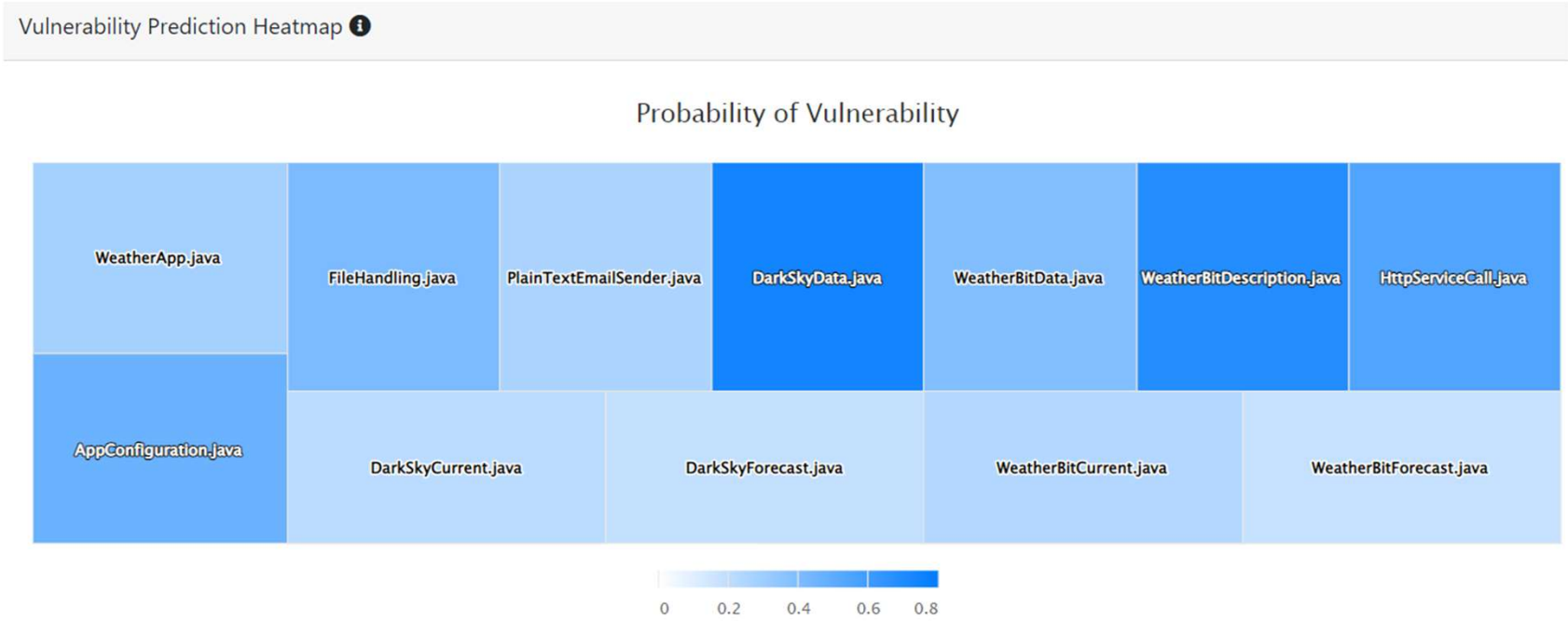
- Overall security level of the analyzed project
- Security level corresponding to CIA characteristics
- Properties Scores



Vulnerability Prediction

Software Vulnerability Prediction tool based on Deep Learning (DL) and Natural Language Processing (NLP)

- Input: Sequences of source code tokens
- Techniques:
  - Word Embedding Practices (i.e., Word2Vec representations)
  - DL model
- Output: Highlights software components that are likely to be vulnerable



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THANK YOU!