Initial DMP

Project Name Software-based Side-Channel Hardening for Enclave Applications - Initial DMP
Principal Investigator / Researcher Jo Van Bulck
Institution KU Leuven

1. General Information

Name applicant

Jo Van Bulck

FWO Project Number & Title

Software-based Side-Channel Hardening for Enclave Applications (1261222N)

Affiliation

- KU Leuven

2. Data description

Will you generate/collect new data and/or make use of existing data?

- Generate new data
- Reuse existing data

Describe in detail the origin, type and format of the data (per dataset) and its (estimated) volume. This may be easiest in a table (see example) or as a data flow and per WP or objective of the project. If you reuse existing data, specify the source of these data. Distinguish data types (the kind of content) from data formats (the technical format).

The project will generate data of the following types: source code (computer programs), experimental data (sequences of measurements), and research papers, technical reports, and source code documentation (manuscripts). An overview is provided in the table below.

Type of data	Format	Volume	How created
Source code	C, C++, Python, Verilog, Scala	< 1GB	Manual programming, either from scratch, or by modifying existing open-source projects (e.g., LLVM, angr).
Binary code	x86/MSP430/RISC-V assembly	< 10GB	Automatically compiled from the above source code.
Experimental data	compressed .txt files	< 50GB	Side-channel measurements and performance data collected from program executions.
Manuscripts	PDF	< 1GB	Papers and technical reports written using document-preparation software (LaTeX).

3. Legal and ethical issues

Will you use personal data? If so, shortly describe the kind of personal data you will use. Add the reference to your file in KU Leuven's Register of Data Processing for Research and Public Service Purposes (PRET application). Be aware that registering the fact that you process personal data is a legal obligation.

- No

Privacy Registry Reference:
Short description of the kind of personal data that will be used:

Are there any ethical issues concerning the creation and/or use of the data (e.g. experiments on humans or animals, dual use)? If so, add the reference to the formal approval by the relevant ethical review committee(s)

- No

Does your work possibly result in research data with potential for tech transfer and valorisation? Will IP restrictions be claimed for the data you created? If so, for what data and which restrictions will be asserted?

- No

Do existing 3rd party agreements restrict dissemination or exploitation of the data you (re)use? If so, to what data do they relate and what restrictions are in place?

- No

4. Documentation and metadata

What documentation will be provided to enable reuse of the data collected/generated in this project?

- Source code will be documented according to best practices in software engineering (inline comments, function documentation, README file with installation and running instructions)
- Experimental data will be documented in published papers and corresponding technical reports.
- Docker containers and continuous integration will be setup for source code repositories where possible to ensure reproducibility and working build environments (as we have extensive experience with for prior open-source projects).

Will a metadata standard be used? If so, describe in detail which standard will be used. If no, state in detail which metadata will be created to make the data easy/easier to find and reuse.

- No

5. Data storage and backup during the FWO project

Where will the data be stored?

The infrastructure of KU Leuven includes communication and collaboration platforms and repository services with sufficient storage space for long-time storage and sharing of development artefacts, which are managed by teams of full-time system administrators. KU Leuven also operates the Lirias digital repository that stores, preserves and provides open access to research papers and reports.

How is backup of the data provided?

The data will be stored on university servers with automatic daily back-up procedures.

Is there currently sufficient storage & backup capacity during the project? If yes, specify concisely. If no or insufficient storage or backup capacities are available then explain how this will be taken care of.

- Yes

The size of data generated in this project is relatively small and well within the limits of the capacity.

What are the expected costs for data storage and back up during the project? How will these costs be covered?

Data will be stored on the standard infrastructure offered by KU Leuven to researchers. No additional costs will be incurred.

Data security: how will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?

Data will be protected by the standard access control mechanisms of the communication and collaboration platforms and repository services.

6. Data preservation after the FWO project

Which data will be retained for the expected 5 year period after the end of the project? In case only a selection of the data can/will be preserved, clearly state the reasons for this (legal or contractual restrictions, physical preservation issues, ...).

All research data will be retained for at least 5 years after the end of the project.

Where will the data be archived (= stored for the longer term)?

The data will be stored on the university's central servers (with automatic back-up procedures) for at least 10 years, conform the KU Leuven RDM policy.

What are the expected costs for data preservation during the retention period of 5 years? How will the costs be covered?

Data will be stored on the standard infrastructure offered by KU Leuven to researchers. No additional costs will be incurred.

7. Data sharing and reuse

Are there any factors restricting or preventing the sharing of (some of) the data (e.g. as defined in an agreement with a 3rd party, legal restrictions)?

- No

Which data will be made available after the end of the project?

Open-source development artifacts will be made available in public git repositories (on KU Leuven GitLab and/or GitHub), and publications on the KU leuven Lirias repository.

Where/how will the data be made available for reuse?

In an Open Access repository.

When will the data be made available?

- Upon publication of the research results

Who will be able to access the data and under what conditions?

All data will be publicly available.

What are the expected costs for data sharing? How will the costs be covered?

Data will be stored on the standard infrastructure offered by KU Leuven to researchers. No additional costs will be incurred.

8. Responsibilities

Who will be responsible for data documentation & metadata?

Jo Van Bulck

Who will be responsible for data storage & back up during the project?

Jo Van Bulck

Who will be responsible for ensuring data preservation and reuse ?

Jo Van Bulck

Who bears the end responsibility for updating & implementing this DMP?
The PI bears the end responsibility of updating & implementing this DMP.