DMP title

Project Name Optimal reconfiguration algorithms for low voltage distribution networks (FWO DMP) - DMP title
Project Identifier u0144437
Grant Title 1SA7222N
Principal Investigator / Researcher Sari Kerckhove
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Institution KU Leuven

1. General Information

Name applicant

Sari Kerckhove

FWO Project Number & Title

1SA7222N: Optimal reconfiguration algorithms for low voltage distribution networks

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).

	Type of data	Format	Volume	Description
1)	Textual output	.tex, .PDF	50-100MB	Written documentation, papers and the thesis manuscript created in LaTeX
2)	networks models	.CSV, .json, .pckl	1-5GB	Data describing the low and medium network models used for tests. These can be derived both from online benchmark models and from realistic low voltage grid data obtained from Electa's cooperation with Fluvius or other distribution system operators.
3)	load-data	.CSV	2-10GB	historic power demand/generation profiles of households reused from Electas databases.
4)	Simulation results	.CSV	1-5GB	For each tested method and grid model, information on optimal configurations, performance of these configurations and convergence times, will be stored
5)	Code files	.py, .jl	0.5-2GB	Developed algorithms and other important code files

I will both be reusing existing data and generating new data.

The existing data consists of 2) power network-models and 3) historic power demand/generation profiles of households.

The new data consists of 1) textual output, 4) simulation results and 5) code files, but will probably also contain 2) new network models. Additionally some of the existing data I use will be modified to such an extent that it differs significantly from the original data.

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

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?

- Yes

Outcomes will be shared with external parties via publications. The sharing of developed algorithms and specific used parameters and techniques will depend on the valorisation potential of the research findings and is part of a broader internal exercise.

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

This might be the case in the future. It is possible that I create new, representative network models using data from a 3rd party. If this happens, I will revisit this data management plan and update it accordingly.

4. Documentation and metadata

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

1) Textual output will be stored in a separate folder where a subdivision is made according to the purpose of the text: papers, specifications, clarifications and the thesis manuscript. The files will carry the date of their generation to facillitate version management.

2) Network models will be stored in seperate folders per type. For some of the reused network models, the original source provides all the information needed. In case the models were significantly modified from the original source, a ReadMe file will be included documenting the made modifications and the dataformat. In case the model was newly generated, a ReadMe file will be included documenting the generation procedure and the dataformat.

3) Historic power demand/generation profiles will be stored in seperate folders per type. For some of the data, the original source provides all the information needed. In case the data was significantly modified from the original source, a ReadMe file will be included documenting the made modifications and the dataformat.

4) Simulation results: Simulation data will be stored in a separate folder per theme, step in the research. These folders will contain a ReadMe file documenting the simulation settings and dataformat.

5) Developed code: Each connected group of code (organised per theme or task) will have its own remote git repository, either on my Github account or on internal repositories within the research group. A ReadMe file documenting the code will be present for each repository.

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 master copy of all data will be kept on my laptop or the VITO OneDrive server.

How is backup of the data provided?

For all the data, except the code files, I will use the VITO OneDrive server with daily back-up procedures.

For the code files, the repositories are backed up by using the remote git repositories either on my Github account or on repositories within the research group. I will keep them up to date by pushing all important additions and modifications when they are made.

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 project data is not expected to exceed 20GB which means that normal user quota are sufficient.

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

A distinction of cost for storage for the different research projects is not made. Instead, this is covered in the general operational expenditures of the group.

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

Password protected user accounts ensure that only the persons of the account can access the working data.

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 data will be retained

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

The developed code, network models, simulation results and textual output will be stored on storage facilities of the research group.
All the publications that result from this research, will remain available in the academic bibliography of KU Leuven.

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

No additional costs are expected at this moment.

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?

Internally the data will be available for the research group. Information will be made externally availabe through publications. The release of specific design may depend on the valorisation potential.

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

- In a restricted access repository

All the data will be available in a restricted access repository for use within the research group. If software models would be made available, this will be upon request to the research group.

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?

Access within the research group.

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

No costs associated with data sharing.

8. Responsibilities

Who will be responsible for data documentation & metadata?

Sari Kerckhove

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

Sari Kerckhove will be responsible for the data storage & back up of code files stored on my Github account.
The responsible for all other data, located on the VITO OneDrive, is the IT responsible at VITO.

Who will be responsible for ensuring data preservation and reuse ?
Sari Kerckhove

Who bears the end responsibility for updating & implementing this DMP?
Sari Kerckhove