CELSA-22-205: Positioning by means of OpticalWireless timE diffeRences (POWER): KU Leuven DMP

Project Name CELSA-22-205: Positioning by means of Optical Wireless timE diffeRences (POWER)

Project Identifier CELSA-22-205

Principal Investigator / Researcher Prof. Nobby Stevens

Project Data Contact Prof. Nobby Stevens

Description This research aims to study the feasibility and applicability of difference in time-of-flight measurement of Optical Wireless signals to provide indoor positioning. Relevant data shall mainly include a description, documentation and design files of the used hardware and corresponding software. Mainly GitHub and KULeuven OneDrive will be used in order to store and share data during the project.

Institution KU Leuven

1. Data Description

What data will you collect or create? Fill out the table below and/or describe.

WP	Type of data	Format	Volume	How created?
WP1: Transmitter and receiver hardware	Information from 3rd parties/manufacturers	.pdf	Several 10-100 MBs	Downloaded from manufacturer, possible extra documentation of interconnections / mode of operation
	Schematics and/or PCB design files	.pdf, PCB design software files (Kicad)	Several 100 MBs	Created in PCB design software (Kicad)
	Software and firmware (depends on selected hardware)	.c .vhd .py ...	Several 10-100 MBs	Written in IDE of choice or of specific hardware manufacturer if applicable
	Evaluation and test data	.npy .csv	Several 10-100 MBs	Sampled with scope or other data acquisition hardware and saved
WP2: Signal Processing	Documentation	.pdf, .tex, .docx	Several 100 MBs	Created in MS Word or LaTeX
	Simulations in Python	.py	Several 10 MBs	Python source code written in IDE of choice
	Simulation data	.xlsx/.csv .npy	Several 100 MBs - 1 GB	Generated by Python simulations mentioned on line above

WP3: Ray Tracing for Signal Statistics (CTE)	Documentation and raytracing input files	.pdf, .docx, .tex Zemax design files, simulation output files (raw data)	100 MBs - 1 GB	Created in MS Word or LaTeX Created in Zemax
WP4: Proof of concept WP5: Large scale setup	Images and identifier mapping of setup	.png, .jpg, .pdf	Several 10-100 MBs	Captured with phone camera Created in Word
	Time based measurement results: excel-files/csv-files and numpy files / pandas dataframes	.xlsx/.csv .npy	Several GBs	Captured with scope or other processing hardware
	Processing code/scripts	.py	Several 10 MBs	Python source code written in IDE of choice
	Processing results reported in graphs/figures	.pdf .png,.jpg, ...	Several 10-100 MBs	Generated by Python code mentioned on line above
Shared	Publications documenting work done across project	.tex and .pdf	Several 100 MBs	Created in MS Word or LaTeX

Do you intend to reuse existing data?
Initially, there are no plans of reusing existing data.
However, it is possible that during the execution of the project, data will be shared or reused from partner universities.

Do you use personal data (i.e. all data possibly identifying an individual)?

- No

The project is not of the nature where personal data will be acquired.

2. Documentation and Metadata

Describe the documentation that will be created for the data. This section deals with the way in which you will document how the dataset was created and subsequently processed.

- Input and output simulation data will be documented with corresponding .txt or markup readme files where necessary
- Code will sufficiently provide comments
- Procedures and results will be documented in publications

Describe the metadata for the data. This section deals with metadata: information contained in your dataset about the research data.
Data exported from oscilloscope can contain extra metadata.

Simulation and measurement data will be document with corresponding readme files where necessary

3. Ethical, Legal and Privacy Issues

Are there any ethical issues concerning the creation and/or use of the data?

No research and experiments with humans or animals will be performed.
Any data used and stored shall be done so with informed consent.

Did you consider all issues about copyrights and IPR?

As of now, we do not foresee any copyright related issues in this project.

Are the collected data considered to be â€œdata containing personal informationâ€ and are all the requirements about the collection of these data met?

No personal data will be collected in this project.

4. Data storage and Backup during Research

How and where will the data be stored during research?

- Centrally on storage facilities of the university
- In a cloud service offered by the university
- In an external cloud service

GitHub and/or KU Leuven OneDrive.

Which back-up procedures are in place?

Data will be stored on GitHub and or KU Leuven OneDrive, which provide back-up procedures.

Describe the data security procedures and who has access to the data.

Data will be private and only accessible by authorized users added to the project repositories. Reading and editing for OneDrive and GitHub permissions will be granted to the PIs and research of the two participating research groups.

5. Data selection and Preservation after Research

What is the long-term preservation plan for these dataset(s)?

The data will remain available on GitHub and/or KU Leuven OneDrive for authorized users and when necessary stored on the university's central servers for at least 10 years at the end of the project.

Data Selection: Which data will have long time value for the research and will be preserved?

Long time valuable and relevant data will likely be reported and summarized in publications and publically available.

6. Data Sharing

Are there any restrictions for sharing the data?

To be determined, confidential information might be shared by partner universities which should not be shared beyond project collaborators, this data shall not be retained after the project and/or mentioned in publications if not given explicit approval by the partner in question.

If there are no restrictions, which mechanisms will be in place to assure that the data are discoverable, accessible and intelligible?

Used datasets may be uploaded alongside publications when relevant.

How will you share the data?

- Repository
- Publication

With whom will the data be shared?

- On request

7. Responsabilities and Resources

Who is responsible for Data Management during the project? This will be the person who might receive questions on the data management aspects of the research project.

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

Which additional resources are needed for the execution of the Data Management Plan?

No additional resources are required.

Did you read the KU Leuven Data Management Policy? (find the link to the policy in the guidance).

- Yes