FWO DMP 1S96922N

Project supervisors (from application round 2018 onwards) and fellows (from application round 2020 onwards) will, upon being awarded their project or fellowship, be invited to develop their answers to the data management related questions into a DMP. The FWO expects a **completed DMP no later than 6 months after the official start date** of the project or fellowship. The DMP should not be submitted to FWO but to the research co-ordination office of the host institute; FWO may request the DMP in a random check.

At the end of the project, the **final version of the DMP** has to be added to the final report of the project; this should be submitted to FWO by the supervisor-spokesperson through FWO's e-portal. This DMP may of course have been updated since its first version. The DMP is an element in the final evaluation of the project by the relevant expert panel. Both the DMP submitted within the first 6 months after the start date and the final DMP may use this template.

1. General Information	
Name applicant	**Yao Zhang**
FWO Project Number & Title	**1S96922N** **Submicrometer precision motion compensation technology**
Affiliation	☒ KU Leuven ☐ Universiteit Antwerpen ☐ Universiteit Gent ☐ Universiteit Hasselt ☐ Vrije Universiteit Brussel ☐ Other:
2. Data description	
Will you generate/collect new data and/or make use of existing data?	☒ Generate new data ☐ Reuse existing data

Describe the origin, type and format of the data (per dataset) and its (estimated) volume *If you **reuse** existing data, specify the **source** of these data.* *Distinguish data **types** (the kind of content) from data **formats** (the technical format).*	**Several types of digital data will be included in this project. These are quantitative and qualitative, mainly of primary origin and of various types: experimental (recordings and sensors), simulated (modeling), derived (data analyzing), and observational (observation and survey). Reference data sets (public depositories) will also be used. Following data formats are considered: textual (surveys and publications), numerical (measures, recording), multimedia (sensors and camera), and software (Python, C++, LabView, Matlab).** **Regarding the recording movies, we will ensure that no persons or animals are present or identifiable in the video.**

3. Ethical and legal issues	
Will you use personal data? If so, shortly describe the kind of personal data you will use AND add the reference to your file in your host institution's privacy register. *In case your host institution does not (yet) have a privacy register, a reference is not yet required of course; please add the reference once the privacy register is in place in your host institution.*	☐ Yes ☒ No If yes: - 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).	☒ Yes ☐ No If yes: - Reference to ethical committee approval: **P193/2019**
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 ☐ No If yes, please comment: **The motion compensation algorithm and the platform have the potential for valorisation. Possibly some parts of the applied software will be licensed under a commercial license, to allow valorisation. The currently used software has a permissive license, allowing the use in commercial software and built on top of it.**

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?	☐ Yes ☒ No If yes, please comment:

4. Documentation and metadata	
What documentation will be provided to enable understanding and reuse of the data collected/generated in this project?	**The Ph.D. researcher is responsible for the data management during the project but consults with Dr. Johan Philips, data-manager of the Robot-Assisted Surgery group. After completion of the Ph.D., supervisor Emmanuel Vander Poorten will take over this responsibility.**
Will a metadata standard be used? If so, describe in detail which standard will be used. If not, state in detail which metadata will be created to make the data easy/easier to find and reuse.	☐ Yes ☒ No If yes, please specify:

5. Data storage & backup during the FWO project	
Where will the data be stored?	**All research data will be stored in storage facilities of the research unit and will be kept for minimally 5 years post finalization of the project.**
How will the data be backed up?	**One Drive (managed by the KU Leuven IT department)**
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 **One Drive provides 2TB safe cloud drive for KU Leuven staff, which is sufficient for all data storage.** ☐ No If no, please specify:

What are the expected costs for data storage and backup during the project? How will these costs be covered? *Although FWO has no earmarked budget at its disposal to support correct research data management, FWO allows for part of **the allocated project budget** to be used to cover the cost incurred.*	**2TB One Drive storage provided by KU Leuven is sufficient for all data storage. No cost for data storage is foreseen.**
Data security: how will you ensure that the data are securely stored and not accessed or modified by unauthorized persons?	**Data stored on KU Leuven-managed personal computers are protected via password access to the computers, as set up by the KU Leuven IT Department. All data will be stored only on KU Leuven's servers and behind proper authentication. During the project we will evaluate how and when to release or publish the datasets, making it available to the community.**

6. Data preservation after the end of the FWO project

FWO expects that data generated during the project are retained for a period of minimally 5 years after the end of the project, in as far as legal and contractual agreements allow.

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 stored in storage facilities of the research unit and will be kept for minimally 5 years post finalization of the project. All data will be anonymized before storage (and will be obtained/used only after approval of the corresponding ethical committees).** **Relevant quantitative research data will be generated during the project. This includes data crucial for verification and reproduction of research results, data that is obtained at great time cost, and data of scientific value. Naturally, any restrictions related to personal data (e.g., informed consent or insufficient anonymization) will be taken into account to determine the preservation.**
Where will these data be archived (= stored for the long term)?	**All research data will be stored in storage facilities of the research unit or on KU Leuven's servers and behind proper authentication.**

What are the expected costs for data preservation during these 5 years? How will the costs be covered? *Although FWO has no earmarked budget at its disposal to support correct research data management, FWO allows for part of **the allocated project budget** to be used to cover the cost incurred.*	**A large amount of raw and derived data will be stored for the long-term evaluation of the micrometer motion compensation technology. Therefore, adequate resources will be allocated in the research expenses budget.**

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)?	☐ Yes ☒ No If yes, please specify:
Which data will be made available after the end of the project?	**Upon publication of the research results. Relevant raw data will be made available when published in journal articles.**
Where/how will the data be made available for reuse?	☐ In an Open Access repository ☒ In a restricted access repository ☐ Upon request by mail ☐ Other (specify):
When will the data be made available?	**Upon publication in journal articles.**
Who will be able to access the data and under what conditions?	**Upon on the access of the publication, the data will be available.**

What are the expected costs for data sharing? How will these costs be covered? *Although FWO has no earmarked budget at its disposal to support correct research data management, FWO allows for part of **the allocated project budget** to be used to cover the cost incurred.*	**A large amount of raw and derived data will be stored for the long-term evaluation of the micrometer motion compensation technology. Therefore, adequate resources will be allocated in the research expenses budget.**

8. Responsibilities	
Who will be responsible for the data documentation & metadata?	**The Ph.D. researcher is responsible for the data management during the project but consults with Dr. Johan Philips, data-manager of the Robot-Assisted Surgery group. After completion of the Ph.D., supervisor Emmanuel Vander Poorten will take over this responsibility.**
Who will be responsible for data storage & back up during the project?	**The Ph.D. researcher is responsible for the data management during the project.**
Who will be responsible for ensuring data preservation and sharing?	**Dr. Johan Philips, data-manager of the Robot-Assisted Surgery group.**
Who bears the end responsibility for updating & implementing this DMP? *Default response: The PI bears the overall responsibility for updating & implementing this DMP*	**The PI bears the overall responsibility for updating & implementing this DMP.**