CamiVVER

Codes And Methods Improvements
for VVER comprehensive safety assessment

Grant Agreement Number: 945081
Start date: 01/09/2020 - Duration: 36 Months

WP2 – Project Management - Task 2.4

D2.2 – Data Management Plan

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Version 1 – 26/02/2021

CAMIVVER – Grant Agreement Number: 945081

Document title	Communication and dissemination strategy plan
Author(s)	Denis Verrier
Document type	Deliverable
Work Package	WP2
Document number	D2.2 - version 1
Issued by	Framatome
Date of completion	26/02/2021
Dissemination level	Public

Summary

This report presents the Data Management Plan of the CAMIVVER project.

This is a living document and this is the first issue.

Approval

Version	First Author	WP leader	Project Coordinator
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Introduction

This report presents the data management plan of the CAMIVVER project. It is established consistently with the project Grant Agreement and Consortium Agreement.

This is the first issue of the report. It will be revised when details and conditions of the output data accessibility will be established by the Project team.

Data Summary

The CAMIVVER project consists in the development, verification and validation of scientific calculation codes and methods in the fields of neutron physics, thermal-hydraulic, computational fluid dynamic and system analyses, for the purpose of engineering studies. The execution of these codes requires input data which have to be collected, and generate valuable output data which are the main contribution to the project results.

The structure of the project is detailed in the Grant Agreement. Work Package 3 is dedicated to input data collection. The data collected in WP3 are mostly existing data coming from past projects and publications. They are collected under different formats such as PDF or Excel. Input data used by the calculation codes, such as physical properties data, e.g. nuclear cross section libraries, are usually under ASCII, xml or hdf5 formats but can be also under proprietary binary formats which are code dependent.

Output data will be generated by project activities in the frame of the technical Work Packages 4 to 7. They will be produced by the computer softwares used in the different nuclear engineering fields, such as: APOLLO2/CARABAS, APOLLO3®, PARCS, TRIPOLI-4®, SERPENT, CATHARE3, STAR-CCM+, TRIO-CFD, CFX, FLUENT, RELAP5, TRACE etc. Output data will be processed and analysed using different languages (e.g.Python) and or specific data processing tools like gnuplot. Raw data will be stored and managed by each project partner who produced them. The accessibility to these extensive datasets through an open-access repository will be promoted. Most relevant output data or results will be reported in the project deliverables in the form of technical documents. They are usually stored under Word or Latex format and distributed under PDF format. The large part of CAMIVVER deliverables have a public dissemination level (see the Grant Agreement) and will be accessible on the project website what will favour the re-use of the data. Activities performed within Work Package 8 aim to disseminating the project results, as described in the CAMIVVER dissemination and exploitation plan (D8.1).

The indicative size of the data produced in the frame of CAMIVVER activities is estimated to about 10 GB.

FAIR data

Making data findable, including provisions for metadata

Promoting the accessibility to the simulation output datasets through an open-access repository is an objective of the project. The detailed conditions of this accessibility will be discussed among the project partners. Whatever the selected option, the datasets will be managed with quality rules ensuring an accurate identification of the data, and discipline compliant metadata elements will be used describing the data to aid data discovery and potential re-use.

Making data openly accessible

Most of the project deliverables (technical reports) will be public and openly available on the project website.

The selection of the simulation datasets to be openly shared still needs to be discussed. This will be made among the project partners and validated by the project Executive Committee.

Published data will be archived in a common and open data repository. Recommended generic and certified repository services, e.g. CERN's Zenodo, will be used to enhance long-term accessibility and re-usability of the data.

Making data interoperable

Output data will be generated by project activities will be produced by computer softwares used in the different nuclear engineering fields, neutronics, thermalhydraulics and Computational Fluid Dynamics, such as: APOLLO2/CARABAS, APOLLO3®, PARCS, TRIPOLI-4®, SERPENT, CATHARE3, STAR-CCM+, TRIO-CFD, CFX, FLUENT, RELAP5, TRACE etc. The used vocabularies, format and units will be compliant to the international standards of the disciplines.

Increase data re-use (through clarifying licences)

Output data are owned by the Project partner that generates them.

Each partner may grant licences to its results. Creative Commons licence will be used for any opened data. Licences will by default include a disclaimer of liability for the re-use of opened data.

No definite period of time limit is planned for access or re-use of the data. Justification for possible case specific embargo for published data will be decided by the Project Consortium. Embargo will be sought primarily in connection with any potential patent application based on project results.

Allocation of resources

Costs related to open access to research data are eligible as part of the project grant.

The costs for making data FAIR have not been estimated yet. Details will be given when the extent and duration of opened results is discussed with the project team.

Data security

During the project datasets will be available only to project partners. Project partners will be responsible for managing and maintaining in appropriate manner the datasets in their possession in compliance with their usual practices.

Some of the data collected or acquired within the project will be shared among project partners. These data will be stored in a secure sharepoint environment provided by Framatome's IT services. Access to the sharepoint needs registration and authentication. Access is restricted to project partners staff working on the project, and is granted by the Project Coordinator after receiving application from the partner.

Long-term and secure preservation of published research data will be ensured by using only certified and OpenAIRE guidelines compatible repositories such as CERN'S Zenodo.

Ethical aspects

The nature of the CAMIVVER project works does not directly involve the processing of personal data. Nevertheless, some personal data will be exchanged and collected for the purpose of, e.g., organizing meetings, granting access on the premises, or, granting access to online digital platforms. The CAMIVVER

project also foresees the organization of an International Workshop and of mobility activities (see the Mobility Manual). Those personal data typically include contact data: a name, an email address, a professional address. Those personal data will be carefully processed and only to the extent necessary for the project activity. Once the research project is finalized, all personal data shall be permanently removed from the data register, unless storing said data for a specific period of time is required by law or agreement or based on ethical research principles.

As for research datasets intended to be openly shared, any indirect reference to sensitive personal data will be removed and destroyed after the anonymised dataset has been checked and validated.