

D6.4 Data Management Plan (DMP)

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2. Data Summary

a. Will you re-use any existing data and what will you re-use it for?

Project partner	Answer to their plan
University of Trieste - UNITS	Yes, we will use the existing data to continue research and developments and for making decisions, comparison, starting new developments of research and products.
Fincantieri SPA	No
	Logged ship data from some ships produced by Vard. Used to identify cases where supercapacitor or SMES energy storage may be used.
VARD Electro AS & VARD Design AS - VARD	General ship design technical background such as general arrangements and technical space arrangements.
	Design of electrical systems on vessels including single-line-diagrams (SLD) for AC/DC-grids and ESS.
Skeleton Technologies OU - Skeleton	Yes, as an input on supercapacitors state-of-the-art.
ASG Superconductors SPA - ASG	Yes. We will use our existing data as well as publicly available data to carry out our tasks within the project
Politechnico di Milano - POLIMI	Some of the data to develop the project will be taken from previous activities. They can be used to assess the first results of the project.
SINTEF Energi AS & SINTEF Ocean AS – SINTEF	Yes, we will use the existing data to continue research and developments.
RINA Germany GMBH & RINA Hellas LTD - RINA	No existing data will be used
Ricerca Sul Sistema Energetico - RSE SPA	Yes, we will use the existing data (e.g., RSE Simapro datasets) to model the ESS and use cases.
University of Genova - UNIGE	Historical data, study cases data and datasheets provided by the partners. They will be used to develop and validate detailed models.

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The University of Birmingham - UoB Yes, we will use the existing data to continue research and developments and for making decisions, comparison, starting new developments of research, and to share with existing and potential project partners.

b. What types and formats of data will the project generate or re-use?

Project partner	Answer to their plan
UNITS	Data formats may include the following information that the project will generate or re-use: - Type of data: experimental, simulation, derived/compiled
	- Forms of data: text, numeric, instrument specific.
Fincantieri SPA	docx and xlms
	Logged data in text format as .csv or .xls.
VARD	Type of data is electrical power, voltage, current and frequency from generators, battery systems and loads. Loads may be frequency drives for thrusters and distribution switchboards. Mode flags of the vessels state. Mechanical power from main engines and propellers. Mechanical speed on engines.
	Arrangements and technical space arrangements will be drawings.
Skeleton	The formats of the data will depend on the type of data, and will include formats *txt, .doc, .ppt, .xls, .pdf for formal reporting and various raw data forms depending on the measurement system in use (equipment specific). The most important data to form main findings will be transformed to common readable format (e.gcsv or .txt) with appropriate text comments.
ASG	Data format will be both numerical (*.txt or *.dat) to feed our modelling software, as well as office format for data handling and sharing within the consortium
POLIMI	The project will generate data about the efficiency and the cost of the storage devices, the efficiency of the power converters and the environmental impact of the proposed solution. Moreover, power profiles will be used too. The data will be, mainly, numerical and they will be stored and elaborated in more than one software.

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SINTEF Energy Research	It will re-use and generate power profiles for marine vessels, scripts for dimensioning of hybrid storage systems. Both will be in the form of Matlab files. Additional data may be Simulink files for simulation of electrical systems and power electronics on the vessels.
SINTEF Ocean AS	Python script to analyse the voyage and power profile data. CSV files containing the power profile generated from the data analysis and simulation. Simulation results in the form of time-series. Parameters for the simulation model.
RINA	N/A
RSE SPA	Type of data: life cycle environmental indicators. Forms of data: text, numeric.
UNIGE	Simulation results and comparison with existing data. Data will have the format of time-series.
UoB	- Type of data: observation, experimental, simulation, derived/compiled - Forms of data: text, numeric, discipline or instrument specific.

N/A: not applicable

c. What is the purpose of the data generation or re-use and its relation to the objectives of the project?

Project partner	Answer to their plan
UNITS	The data generation or re-use should be aligned with the objectives of the project and help to achieve its goals. This is to ensure that a project's research data is created, managed, documented, shared, and preserved in a way that enables easy verification and re-use.
Fincantieri SPA	Definition of the requirements that have to be satisfied to physically integrate on- board the ESS identified in WP1.
VARD	Identify cases where supercapacitor or SMES energy storage may be used.
Skeleton	The purpose of the data is to evaluate the performance of supercapacitors in marine applications.
ASG	Data generation and re-use will be needed to carry out test and analysis of SMES storage system

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POLIMI	The data are mostly related to the activities in WP3 and WP4 where these data are essential to achieve the WP objectives.
SINTEF	The data are mostly related to the activities in WP1 and WP3 where these data are essential to achieve the WP objectives.
RINA	N/A
RSE SPA	Data generated by RSE will be used to compare environmental performances of the proposed solutions/technologies with the base case.
UNIGE	To validate the proposed methodology and the expected goals.
UoB	Our generated data and their re-use will be aligned with the objectives of the project and will help to achieve its goals. This is to ensure that a project's research data is created, managed, documented, shared, and preserved in a way that enables easy verification and re-use.

d. What is the expected size of the data that you intend to generate or re-use?

Project partner	Answer to their plan
UNITS	Generally, GBs
Fincantieri SPA	We expect data sizes in the hundreds of MB
VARD	In the range of 1 GB
Skeleton	1-10 GB
ASG	1-10 GB
POLIMI	Generally, from MB to GBs.
SINTEF	Generally, from MB to GBs.
RINA	N/A
RSE SPA	N/A
UNIGE	In the magnitude of GB.

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From MBs to GBs

e. What is the origin/provenance of the data, either generated or re-used?

Project partner	Answer to their plan
UNITS	Simulation and measurement data, comparison data, customer data.
Fincantieri SPA	Data generated by our in-house tools.
VARD	Drawings and specifications from VARD engineering based on customer specifications and supplier documentation. Logged data from ships.
Skeleton	Measurements in laboratory environment, customer interviews and market research.
ASG	Origin of data is mainly from data acquisition, and as output from our modelling software
POLIMI	Efficiency and cost of the storage devices will be generated by other partners collaborating to WP3 and WP4. Power profiles will be provided by the activities of WP1.
SINTEF	Power profiles can be supplied by other partners or generated by simulation. The Simulink files and the Matlab scripts are created by SINTEF.
RINA	N/A
RSE SPA	Data from industrial partners (primary data), from environmental database or from literature.
UNIGE	Experimental data and simulation results.
UoB	Our re-used and/or generated data are mainly the results of simulation work, measurement, comparison, and from literature surveys.

f. To whom might your data be useful ('data utility'), outside your project?

Project partner	Answer to their plan

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UNITS	Only data that are on published papers could be available for future scientific purposes
Fincantieri SPA	Our data will be useful for the physical integration of storage systems on board ships as well as for the definition of the environmental requirements that any equipment on board ships must comply with.
VARD	Data is only open to participants in VACCESS project.
Skeleton	Potential integrators of supercapacitors in marine vessels.
ASG	Potential integrators of SMES in marine vessels
POLIMI	Data might be useful for researchers in the topic of integration of hybrid storages for marine applications but also for other transport sectors. Moreover, companies working in realizing and integrating storages in electrical system of vessels can be very interested to the result of the project.
SINTEF	Our data might be useful to other researchers in our field who are working on similar projects or who are interested in building upon your research. Also, data could be useful to developer of relevant marine standards, decision maker, electric vessel developer/integrator, component manufacturers.
RINA	N/A
RSE SPA	Our data might be useful to other researchers in our field who are working on similar projects, it can support policy makers and decision makers in the pathway towards the decarbonization of marine transportation.
UNIGE	Research centres, academic institutions, industry.
UoB	Our data can be useful to other researchers in our field who are working on similar projects or who are interested in building upon our research. By sharing these data, we can maximize the research potential of existing research outputs by re-using and re-purposing them. Also, our data could be useful to developer of relevant marine standards, decision maker, electric vessel developer/integrator, and component manufacturers.

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3. FAIR data

a. Making data findable, including provisions for metadata: Will data be identified by a persistent identifier?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	Unable to answer currently.
VARD	N/A
Skeleton	A persistent identifier can be identified. It needs to be agreed upon within the consortium.
ASG	Most of the data will be for internal use. Data that could be shared may profit from a persistent identifier. It needs to be agreed upon within the consortium.
POLIMI	No. Some of the data will be shared by publishing papers but they will not be available as raw data.
SINTEF	It is not planned to share these data externally. Data will be archived for internal use only.
RINA	N/A
RSE SPA	Results could be published in international scientific journals (with IF) with DOI identification.
UNIGE	N/A
UoB	This can be applicable when the data are included for instance in conference and journal publications, which will be assigned special DOIs for identification.

b. Making data findable, including provisions for metadata: Will rich metadata be provided to allow discovery? What metadata will be created? What disciplinary or

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general standards will be followed? In case metadata standards do not exist in your discipline, please outline what type of metadata will be created and how.

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	Unable to answer currently.
VARD	N/A
Skeleton	Metadata, such as origin, data identification, labels, date of measurement, etc., will be provided where possible.
ASG	Metadata, such as origin, data identification, labels, date of measurement, etc., will be provided where possible.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	Results could be published in international scientific journals (with IF) open access and EU project deliverables where descriptive, structural, administrative, technical, contextual and usage Metadata is created. Keywords will be used to insure data findability.
UNIGE	N/A
UoB	N/A

c. Making data findable, including provisions for metadata: Will search keywords be provided in the metadata to optimize the possibility for discovery and then potential re-use?

Project partner	Answer to their plan
UNITS	N/A

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Fincantieri SPA Unable to answer currently.	
VARD	N/A
Skeleton	Yes
ASG	Unable to answer currently.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	Keywords will be used to insure data findability.
UNIGE	N/A
UoB	N/A

d. Making data findable, including provisions for metadata: Will metadata be offered in such a way that it can be harvested and indexed?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	Unable to answer currently.
VARD	N/A
Skeleton	Yes
ASG	Unable to answer currently.
POLIMI	N/A
SINTEF	N/A
RINA	N/A

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RSE SPA	N/A
UNIGE	N/A
UoB	N/A

e. Making data accessible - Repository: Will the data be deposited in a trusted repository?

Project partner	Answer to their plan
UNITS	N/A for the moment
Fincantieri SPA	During the course of the project, the data will be deposited in protected archives within the company. Subsequently, it will be the project manager's responsibility to deposit the data on the project's reference site.
VARD	N/A
Skeleton	Yes. (SharePoint by the coordinator?)
ASG	The data that we will share within the project will be available on the Eu project repository
POLIMI	Some of the data will be shared in the repository of the project and/or in closed repository of the partners for the restricted access of the other partners of the project.
SINTEF	Data will be archived in our internal servers but will not be made accessible.
RINA	N/A
RSE SPA	Yes, the EU project repository.
UNIGE	N/A
UoB	Yes. Part of our produced data will be shared and stored in the project main repository, whilst other parts will be stored on our office computers and sharing points, all with restricted access.

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f. Making data accessible - Repository: Have you explored appropriate arrangements with the identified repository where your data will be deposited?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	No
VARD	N/A
Skeleton	Yes. (SharePoint by the coordinator?)
ASG	Not yet
POLIMI	Institutional repository is already arranged to be used in research projects.
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	Arrangement was only assured with the project management team for the main repository of the project.

g. Making data accessible - Repository: Does the repository ensure that the data is assigned an identifier? Will the repository resolve the identifier to a digital object?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	Data storage ensures data protection. The identifier is associated by the user.
VARD	N/A
Skeleton	Yes. (SharePoint by the coordinator?)

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ASG	To be discussed
POLIMI	No. DOI will not be provided by the repository.
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A

h. Making data accessible - Data: Will all data be made openly available? If certain datasets cannot be shared (or need to be shared under restricted access conditions), explain why, clearly separating legal and contractual reasons from intentional restrictions. Note that in multi-beneficiary projects it is also possible for specific beneficiaries to keep their data closed if opening their data goes against their legitimate interests or other constraints as per the Grant Agreement.

Project partner	Answer to their plan
UNITS	This will follow the directions stated in the project Grant Agreement. While the aim is to maximize the openness and accessibility of data, not all data is required to be made openly available. It is important to allow access to data in a manner that aligns with legal, ethical, and privacy considerations.
Fincantieri SPA	Unable to answer currently.
VARD	Vard logged data, arrangement and technical documentation are only open to participants in VACCESS project. Data are anonymised data that are in ownership of the ship owners. The data will be distributed to project partners according to need. Arrangements may be used as background for building a 3d-model in the project. The 3D-model and/or the arrangement background shall not be copied or utilized for commercial exploitation by other project participants.

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	Electrical system designs may be used to perform electrical systems integration in the project. Not to be copied or utilized for commercial exploitation by other project participants.
Skeleton	In case there is the need to make certain data openly accessible outside of the consortium, partners will decide about how this will be achieved on a case-by-case basis.
ASG	Data for internal use only will not be openly shared. These data are considered not useful for the achievements of the project, but of relevance for ASG itself. In case there is the need to make certain data openly accessible outside of the consortium, partners will decide about how this will be achieved on a case-by-case basis.
POLIMI	Data of the storage devices used for the LCA and for the efficiency and cost analysis cannot be shared by POLIMI, since they are used by POLIMI only for the project. Nevertheless, obtained results will be shared by means of scientific publication.
SINTEF	Data about power profiles especially when obtained by manufacturers cannot be shared by us since we will use only for this project. The script will be based on previous code and will remain as SINTEF IP. The procedure followed will be documented in papers and in project reports.
RINA	N/A
RSE SPA	RSE partner data will be openly available.
UNIGE	N/A
UoB	This will follow the directions stated in the project Grant Agreement. Openness and accessibility will be promoted to the possible extent, while respecting legal and ethical considerations associated with the data. The goal is to strike a balance between openness and the need to protect sensitive information or comply with applicable regulations.

i. Making data accessible - Data: If an embargo is applied to give time to publish or seek protection of the intellectual property (e.g. patents), specify why and how long this will apply, bearing in mind that research data should be made available as soon as possible.

Project partner		Answer to their plan		_
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UNITS	N/A
Fincantieri SPA	Unable to answer currently.
VARD	N/A
Skeleton	The general rule of thumb for all outcomes of the project, especially in the case that partners might seek to apply for patents is "First protect and then publish".
ASG	We expect that some protection of IP may be required by ASG. In this case, we expect that 6 months embargo period is realistic to apply for IP protection
POLIMI	N/A
SINTEF	We do not expect and embargo period to be necessary.
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	This issue has not been discussed with project partners yet, and the relevant arrangement and period have not been decided.

j. Making data accessible - Data: Will the data be accessible through a free and standardized access protocol?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	If the data is uploaded to the project's reference internet site, it will be accessible.
VARD	No
Skeleton	Data will be accessible only for members of the consortium.
ASG	No
POLIMI	N/A

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SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	Access to project data will only be arranged for members of the project consortium through planned sharing points.

k. Making data accessible - Data: If there are restrictions on use, how will access be provided to the data, both during and after the end of the project?

Project partner	Answer to their plan
Project partner	Answer to their plan During the project: 1. Controlled Access: If there are restrictions on data access, such as sensitive or confidential data, access can be provided through controlled mechanisms. This typically involves a data access committee or governing body that assesses requests for access and grants permissions based on predefined criteria. Access controls, including authentication and authorisation mechanisms, can be implemented to ensure that only authorised individuals or groups can access
UNITS	 the data. 2. Data Sharing Agreements: Data providers may require users to sign data sharing agreements that outline the terms and conditions for accessing and using the data. These agreements may include clauses related to data security, privacy, confidentiality, publication rights, intellectual property, and other relevant considerations. By signing these agreements, users agree to abide by the specified terms and restrictions.
	 After the project: 1. Data Depositories: Data can be deposited in trusted repositories that facilitate controlled access even after the project's end. These repositories may continue to enforce access restrictions and provide mechanisms for users to request access to the data. The repository administrators can review, and grant access based on the policies and criteria established by the data provider or governing body.

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	2. Data Access Requests: Researchers or users seeking access to the data after the project's end may need to submit data access requests to the data provider or repository. These requests should specify the purpose of access, intended use, and any relevant information required to evaluate the request. The data provider or repository can then assess the requests based on the applicable restrictions and grant access accordingly.
Fincantieri SPA	We do not foresee any restrictions on use.
VARD	N/A
Skeleton	Data will be accessible for relevant members of the consortium through private section of dedicated data repository (SharePoint by coordinator?). Handling of such data is regulated by the Grant Agreement.
ASG	Data will be accessible for relevant members of the consortium through private section of dedicated data repository. Handling of such data is regulated by the Grant Agreement.
POLIMI	Some data will be published under green or gold open access license.
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	During the project period, access to the restricted UoB data for members of the consortium will be available through controlled sharing points by the project scientific coordinator.

I. Making data accessible - Data: How will the identity of the person accessing the data be ascertained?

Project partner	Answer to their plan
UNITS	 User Authentication Access Control List
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	3. Data Access Agreements
	4. Institutional Affiliation
Fincantieri SPA	It will depend on the developer of the reference internet site of the project.
VARD	N/A
Skeleton	The access to dedicated data repository is given only to project team members.
ASG	Access is granted to the project team members through an appropriate identification process
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A
	а

m. Making data accessible - Data: Is there a need for a data access committee (e.g. to evaluate/approve access requests to personal/sensitive data)?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	Νο
VARD	N/A
Skeleton	No, this can be done case-by-case between consortium partners.
ASG	No, this can be done case-by-case between consortium partners.
POLIMI	N/A

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SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A

n. Making data accessible - Data: Will metadata be made openly available and licenced under a public domain dedication CCO, as per the Grant Agreement? If not, please clarify why. Will metadata contain information to enable the user to access the data?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	It will depend on the developer of the reference internet site of the project.
VARD	N/A
Skeleton	Yes, where possible.
ASG	Yes, when possible.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A

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o. Making data accessible - Data: How long will the data remain available and findable? Will metadata be guaranteed to remain available after data is no longer available?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	It will depend on the developer of the reference internet site of the project.
VARD	N/A
Skeleton	For 5 years after the final payment as set in Grant Agreement.
ASG	For 5 years after the final payment as set in Grant Agreement.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	If data is published it will remain available and findable.
UNIGE	N/A
UoB	This will depend on factors such as the nature of the data, funding requirements, and the institutional policies of the main project coordinator.

p. Making data accessible - Data: Will documentation or reference about any software be needed to access or read the data be included? Will it be possible to include the relevant software (e.g. in open source code)?

Project partner	Answer to their plan
UNITS	1. Data should include information about the software used to generate, process, or analyse the data. This documentation can describe the software version, configuration, and any relevant parameters or settings that are necessary for data interpretation or reproduction.

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	2. Dependencies and Requirements: If the software has specific dependencies or requirements, such as certain operating systems, libraries, or programming languages, this information should be documented. Providing these details allows users to ensure they have the necessary software environment to access and utilize the data effectively.
	3. Instructions and Usage Guidelines: Documentation should include clear instructions and usage guidelines for using the software to access and read the data. This may involve providing step-by-step procedures, code examples, or tutorials that guide users through the process of working with the data using the associated software.
Fincantieri SPA	The generated files can be opened with any compiler that opens xls and pdf files.
VARD	N/A
Skeleton	Yes, when possible. The most important data will be transformed to common readable format (e.gcsv or .txt) with appropriate text comment.
ASG	Data will be made available in standard .txt or office extensions, although for internal data handling and processing, special data formats may be used as some of our modelling software are internally developed
POLIMI	Some of the data will be in text format (so accessible without any software), some in Matlab some in SimaPro.
SINTEF	Data will be in Matlab or Python and that will be a prerequisite for data access.
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	No. Part of the data will be in text format so they can be read by any available text editors and Excel program. Other data will be generated via MATLAB program and will usually be accessed and displayed through this well-known program.

q. Making data interoperable: What data and metadata vocabularies, standards, formats or methodologies will you follow to make your data interoperable to

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allow data exchange and re-use within and across disciplines? Will you follow community-endorsed interoperability best practices? Which ones?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	unable to answer currently.
VARD	CSV, xls, dwg, docx, pdf. Office package, Autocad and Acrobat.
Skeleton	Excel files and reports.
ASG	Office file formats.
POLIMI	N/A
SINTEF	CSV, .xls, .txt
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	CSV, .mat, .xls, .txt

r. Making data interoperable: In case it is unavoidable that you use uncommon or generate project specific ontologies or vocabularies, will you provide mappings to more commonly used ontologies? Will you openly publish the generated ontologies or vocabularies to allow reusing, refining or extending them?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	unable to answer currently.
VARD	N/A

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Skeleton	N/A
ASG	Unable to answer currently.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A

s. Making data interoperable: Will your data include qualified references [a] to other data (e.g. other data from your project, or datasets from previous research)?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	unable to answer currently.
VARD	N/A
Skeleton	Yes, where possible.
ASG	Yes, where possible.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	If data is published it will include qualified references to other qualified and already available data.

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UNIGEN/AUoBYes, if the previous/other data are re-used or used to initiate/support the generated
project data as required or needed.

[a] A qualified reference is a cross-reference that explains its intent. For example, X is regulator of Y is a much more qualified reference than X is associated with Y, or X see also Y. The goal therefore is to create as many meaningful links as possible between (meta)data resources to enrich the contextual knowledge about the data. (Source: https://www.go-fair.org/fair-principles/i3-metadata-include-qualified-references-metadata/) Question not answered.

t. Increase data re-use: How will you provide documentation needed to validate data analysis and facilitate data re-use (e.g. readme files with information on methodology, codebooks, data cleaning, analyses, variable definitions, units of measurement, etc.)?

Project partner	Answer to their plan	
UNITS	N/A	
Fincantieri SPA	All documentation will be provided during the delivery of the project deliverables with an explanation of the work carried out already included and all data will be standardized with the international measurement system and each variable will be declared during writing.	
VARD	N/A	
Skeleton	Based on data availability and if inquired by the partners.	
ASG	Yes, data will be accompanied by appropriate explanation to facilitate their re-use.	
POLIMI	Possible script will be opportunely commented to be reused.	
SINTEF	We will write a short readme file containing instructions for the data and brief explanations for internal re-use.	
RINA	N/A	
RSE SPA	With supporting information documents/annexes to the main research document.	
UNIGE	Deliverables will include all the information needed to re-use data.	

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UoB

A suitable short document can be associated with each set of data if needed to provide information about the data, their origin, units, analysis, re-use, ... etc.

u. Increase data re-use: Will your data be made freely available in the public domain to permit the widest re-use possible? Will your data be licensed using standard reuse licenses, in line with the obligations set out in the Grant Agreement?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	Our data will be shared and will follow the indications defined during the signing of the Grant Agreement.
VARD No. Not to be copied or utilized for commercial exploitation by other proj participants.	
Skeleton	Data will be accessible only for members of the consortium. Selected datasets may be published in peer-reviewed publication.
ASG	Data deemed useful to other partners, will be accessible only for members of the consortium. Selected datasets may be published in peer-reviewed publication.
POLIMI	They will be only published in scientific publication, but raw data will not be accessible outside of the project.
SINTEF	Data is subject to Intellectual Property Rights and have limitations on its use and redistribution.
RINA	N/A
RSE SPA	RSE data will be openly available.
UNIGE	N/A
UoB	Data can be available as far as their availability comply with the project General Agreement.

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v. Increase data re-use: Will the data produced in the project be useable by third parties, in particular after the end of the project?

Project partner	Answer to their plan
UNITS	It depends on case by case.
Fincantieri SPA	unable to answer currently.
VARD	Νο
Skeleton	Data will be accessible only for members of the consortium. Selected datasets may be published in peer-reviewed publication and hence useable by third parties.
ASG	Not intended for external re-use.
POLIMI	Not intended for external re-use.
SINTEF	Not intended for external re-use.
RINA	N/A
RSE SPA	Yes, data will be useable by third parties.
UNIGE	N/A
UoB	Currently, data are being shared with project partners only. By default, third parties can re-use project data which will be available within conference and journal publications written/prepared by the project members.

w. Increase data re-use: Will the provenance of the data be thoroughly documented using the appropriate standards?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	The data used will be indicated following the reference standards.
VARD	N/A

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Skeleton	Yes
ASG	The data used will be indicated following the reference standards.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	Yes, RSE provenance data will be thoroughly documented.
UNIGE	N/A
UoB	N/A

x. Increase data re-use: Describe all relevant data quality assurance processes.

Project partner	Description
UNITS	N/A
Fincantieri SPA	unable to answer currently.
VARD	N/A
Skeleton	By following internal data quality management processes.
ASG	By following internal data quality management processes.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	For LCA studies, data quality indicators relate directly to those key characteristics of Life Cycle Inventory data sets that describe their quality. These are: technological, geographical, and time-related representativeness, completeness of environmental impacts covered by the inventory, achieved precision of the data, and appropriate and consistent application of LCI methodologies.

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UNIGE N/A UoB N/A

y. Increase data re-use: Further to the FAIR principles, DMPs should also address research outputs other than data, and should carefully consider aspects related to the allocation of resources, data security and ethical aspects.

Project partner	Comments
UNITS	N/A
Fincantieri SPA	Unable to answer currently.
VARD	N/A
Skeleton	N/A
ASG	Unable to answer currently.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A

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4. Other research outputs

a. In addition to the management of data, beneficiaries should also consider and plan for the management of other research outputs that may be generated or reused throughout their projects. Such outputs can be either digital (e.g. software, workflows, protocols, models, etc.) or physical (e.g. new materials, antibodies, reagents, samples, etc.).

Project partner	Comments
UNITS	N/A
Fincantieri SPA	We do not generate these outputs in the project.
VARD	N/A
Skeleton	N/A
ASG	We do not generate these outputs in the project.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A

b. Beneficiaries should consider which of the questions pertaining to FAIR data above, can apply to the management of other research outputs, and should strive to provide sufficient detail on how their research outputs will be managed and shared, or made available for re-use, in line with the FAIR principles.

Project partner		Comments			
UNITS	N/A				
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Fincantieri SPA	Ok
VARD	N/A
Skeleton	N/A
ASG	N/A
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A
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5. Allocation of resources

a. What will the costs be for making data or other research outputs FAIR in your project (e.g. direct and indirect costs related to storage, archiving, re-use, security, etc.)?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	Data management costs are already included in the costs of indirect personnel who, in addition to carrying out the technical activity, will also have to manage the data, therefore the costs cannot be quantified.
VARD	N/A
Skeleton	At current stage no such costs are foreseen.
ASG	Such costs have not been specified or reckoned yet. However, once they arise, they will be covered from the project fund.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	Such costs have not been specified or reckoned yet. However, once they arise, they will be covered from the project fund.

b. How will these be covered? Note that costs related to research data/output management are eligible as part of the Horizon Europe grant (if compliant with the Grant Agreement conditions)

Project partner	,	Answer to their pla	n	
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UNITS	N/A
Fincantieri SPA	These costs are already included in the project budget.
VARD	N/A
Skeleton	At current stage no such costs are foreseen.
ASG	Such costs have not been specified or reckoned yet. However, once they arise, they will be covered from the project fund.
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A
	ll de la constant de

c. Who will be responsible for data management in your project?

Project partner	Answer to their plan
UNITS	1. Principal Investigator (PI)
UNITS	2. Research Team
Fincantieri SPA	The project manager of the project.
VARD	Andreas Hjellbakk
Skeleton	Project Manager
ASG	The project manager at ASG
POLIMI	The project manager at POLIMI (Luigi Piegari) will be responsible to manage all the exchange of data with the other partners in the project. He will coordinate the

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	researchers of POLIMI, ensuring a compliant collection, store and use of the project data.
SINTEF	The project manager at SINTEF Energy Research (Salvatore D'Arco) will be responsible to provide strategic direction, ensure compliance with data management policies and requirements, and may coordinate with other team members or stakeholders. Researchers directly involved in data collection, analysis, and documentation play a critical role in data management. They are responsible for adhering to data management practices, maintaining data integrity, and providing necessary documentation and metadata related to their research activities.
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	The scientific officer of the project Professor Pietro Tricoli

d. How will long term preservation be ensured? Discuss the necessary resources to accomplish this (costs and potential value, who decides and how, what data will be kept and for how long)?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	It will depend on the developer of the reference internet site of the project.
VARD	N/A
Skeleton	Data will be stored on project's dedicated repository and partners own repositories.
ASG	Data will be stored on project's dedicated repository and partners own repositories.
POLIMI	N/A

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6. Data security

a. What provisions are or will be in place for data security (including data recovery as well as secure storage/archiving and transfer of sensitive data)?

Project partner	Answer to their plan
UNITS	 Secure Storage and Archiving: Implement secure storage and archiving mechanisms to protect data from unauthorised access, data loss, or corruption. This can involve utilising encrypted storage systems, access controls, regular backups, and redundancy measures to ensure data availability and integrity. Data Recovery: Develop data recovery plans and procedures to mitigate the risk of data loss. This includes regular backups, off-site storage of backup copies, and periodic testing of data recovery processes to ensure their effectiveness. Access Controls: Implement robust access control mechanisms to restrict data
	access to authorised individuals or groups. This can involve user authentication, role-based access control, and data access logs to track and monitor data access activities.
Fincantieri SPA	It will depend on the developer of the reference internet site of the project.
VARD	N/A
Skeleton	N/A
ASG	Data will be generally stored on the company servers that will follow the internal security guidelines
POLIMI	Data will be stored on PC and institutional repository of POLIMI.
SINTEF	Data will be stored on our internal servers and will follow the internal guidelines at SINTEF.
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A

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7. Ethics

a. Are there, or could there be, any ethics or legal issues that can have an impact on data sharing? These can also be discussed in the context of the ethics review. If relevant, include references to ethics deliverables and ethics chapter in the Description of the Action (DoA).

Project partner	Answer to their plan
	 Intellectual Property Rights: Data sharing may involve considerations related to intellectual property rights, such as copyrights, patents, or trade secrets. It is important to understand and address any intellectual property issues and potential restrictions on data sharing imposed by these rights.
UNITS	2. Data Ownership and Data Sharing Agreements: Clarifying data ownership and establishing data sharing agreements among project partners or collaborators is essential. These agreements should address issues such as data access, usage rights, data attribution, and the duration of data sharing.
	3. Data Use Limitations: Depending on the nature of the data or the research context, there may be limitations on how the data can be used or shared. These limitations should be clearly communicated and respected to avoid unintended consequences or potential ethical or legal issues.
Fincantieri SPA	We do not foresee any ethical issues.
VARD	Data is intellectual property of VARD and/or relevant shipowners.
Skeleton	No (It is regulated by Grant Agreement)
ASG	No (It is regulated by Grant Agreement)
POLIMI	Data sharing may involve considerations related to intellectual property rights, such as copyrights, patents, or trade secrets.
SINTEF	Data sharing may involve considerations related to intellectual property rights, such as copyrights, patents, or trade secrets.
RINA	N/A
RSE SPA	N/A
UNIGE	N/A

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UoB

N/A

b. Will informed consent for data sharing and long term preservation be included in questionnaires dealing with personal data?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	unable to answer.
VARD	N/A
Skeleton	Yes
ASG	Yes
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A
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8. Other issues

a. Do you, or will you, make use of other national/funder/sectorial/departmental procedures for data management? If yes, which ones (please list and briefly describe them)?

Project partner	Answer to their plan
UNITS	N/A
Fincantieri SPA	It will depend on the developer of the reference internet site of the project.
VARD	N/A
Skeleton	N/A
ASG	No
POLIMI	N/A
SINTEF	N/A
RINA	N/A
RSE SPA	N/A
UNIGE	N/A
UoB	N/A

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9. Resources

- Wilkinson, M., Dumontier, M., Aalbersberg, I. *et al.* The FAIR Guiding Principles for scientific data management and stewardship. *Sci Data* 3, 160018 (2016), <u>https://doi.org/10.1038/sdata.2016.18</u>
- [2] <u>https://www.go-fair.org/fair-principles/</u> Accessed on 18/06/2023.
- [3] <u>https://open-research-europe.ec.europa.eu/for-authors/data-guidelines#fairdata</u> Accessed on 18/06/2023.

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