PortForward

D9.5 – Data Management Plan (DMP) V1

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1.1	18.12.2018	José Luis Burón (ACCIONA)	Global quality check of the document
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Abbreviations

DMP	Data Management Plan
KPI	Key Performance Indicator
ORD	Open Research Data
FAIR	Findable, Accessible, Interoperable, Reusable
WP	Work Package

Executive Summary

This document is a deliverable of the PortForward project, which is funded by the European Union's Horizon 2020 Program under Grant Agreement #769267.

It describes what data the project will generate and how it will be produced and analyzed. It also aims to detail how the data related to the PortForward project will be disseminated and afterwards shared and preserved.

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1 Introduction

This document introduces the first version of the project Data Management Plan (DMP).

PortForward participates in the Open Research Data Pilot (ORD pilot), through which the European Commission aims to improve and maximize access and reuse of research data generated by Horizon 2020 projects. The ORD pilot considers the need to balance openness and protection of scientific information, commercialization and Intellectual Property Rights (IPR), privacy concerns, security as well as data management and preservation questions.

The DMP describes the data management life cycle for the data to be collected, processed and/or generated by the project. The PortForward DMP provides an analysis of the main elements of the data management policy that will be used by the consortium regarding all the datasets that will be generated by the project. It ensures that the research data will be findable, accessible, interoperable and re-usable (FAIR).

It also lists the different datasets that will be used, collected and generated by the project, the main exploitation perspectives of these datasets, and the major management principles the project will implement to handle these.

The DMP is not a fixed but rather a living document that will evolve through the lifespan of the project. This first version of the DMP includes an overview of the datasets to be produced by the project and the specific conditions that are attached to them. The DMP will cover the complete data life cycle.

2 Data summary

All PortForward partners have identified the datasets that will be produced during the different phases of the project. The following table provides a summary of these datasets, including the associated WP and the name of the partner responsible for each one.

Table 1 Overview of PortForward datasets

Dataset No.	Dataset Name	Lead	Associated WP
1	User expectations and goals	ACCIONA	WP1
2	Use case restrictions	Vigo	WP1
3	Technical specifications	IFF/ LEITAT	WP1
4	KPI catalogue	MARTE	WP1
5	System architecture incl. existing port systems	LEITAT	WP2
6	People and assets tracking data	LEITAT	WP4
7	AR Remote assistance data	UBIMAX	WP4

Dataset No.	Dataset Name	Lead	Associated WP
8	AR pilot assistance data	UBIMAX	WP4
9	Stowage optimization data	ACCIONA	WP4
10	Sustainability assessment data	LEITAT	WP5
11	Yard operations data	BRUNEL	WP5
12	Digital twin (3D model, process and sensor data)	IFF	WP6
13	Decision support system	IFF	WP6
14	Stakeholder survey data	MARTE	WP7
15	Use case implementation and evaluation data	MARTE/ KRISTIANSAND	WP7
16	Standardization	IFF	WP8
17	Technology scouting and technology watch data	CORE	WP8, WP9
18	Market, competition and customer data	MARTE	WP8
19	Business model canvas elements	CORE	WP8
20	IPR catalogue	CORE	WP9
21	IoT device/network communication and localization data	IMEC	WP3, WP4

In order to collect all relevant information for each dataset, the following table was provided to the consortium partners. One table was generated for each dataset. The topics addressed in the table include all relevant information, such as dataset responsible partner, use of metadata, definition of data formats, provisions for making the data FAIR, security and ethical aspects. All the tables with the detailed information on each dataset are provided in the annex of this deliverable.

Table 2 Form for collection of information on each dataset

DATASET NAME	
Data Identification	
Dataset description	
Source	
Partners activities and responsibilities	

DATASET NAME	
Partner owner of the data; copyright holder (if applicable)	
Partner in charge of data collection	
Partner in charge of data analysis	
Partner in charge of data storage	
Related WP(s) and task(s)	
Standards	
Info about metadata (production and storage dates, places) and documentation?	
Standards, format, estimated volume of data	
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	
Data sharing, re-use, distribution, publication (How?)	
Embargo periods (if any)	
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	

3 FAIR data

PortForward aims at generating FAIR data, i.e. data that is findable, accessible, interoperable and reusable.

3.1 Making data findable, including provisions for metadata

In order to make data findable, metadata will be used. All partners have agreed in providing relevant metadata and keywords, so that their data will be easily discoverable. Clear version numbers will be included (automated process through the project repository) and standard naming conventions will be defined.

3.2 Making data openly accessible

The consortium partners already identified which data will be made openly available and which cannot be shared (or need to be shared under restriction), including the reason why access is restricted in the latter case.

In the next DMP versions, more details will be provided regarding the accessibility of the data. Details on the repository, the methods and tools necessary to access the data will be included in future versions of the DMP. The consortium aims at using the project website (or other easily accessible repositories) as repository for open accessible (public) data, ensuring easy access to anyone interested.

3.3 Making data interoperable

Provisions are also taken to make data interoperable, making it easier to exchange and re-use them across research institutions, organisations, etc. This could be more difficult for project-specific technical datasets, but the project strives in making all open data interoperable. Interoperability for technical data is also addressed in WP2, T2.3 "Interoperability & data modelling". The goal of this task is to define a generic model of data curation.

3.4 Increase data re-use (through clarifying licences)

Information regarding the reusability of the data will be provided for each dataset separately. The consortium partners provided relevant information on embargo periods and the intended period that their data will remain reusable.

4 Allocation of resources

Costs for making the project data FAIR are eligible as part of the Horizon 2020 grant. At this current stage, no such costs are foreseeable. In the future DMP versions this chapter will be updated and include costs for long-term preservation of data (after the project end).

5 Data security

During the implementation of the PortForward project the consortium members will collect data in various forms, e.g. pen and paper, photos, videos, electronic documents. For the purpose of the project documentation this data will be stored individually by each partner. For this, the respective organizational rules and regulations of each partner with respect to data storage and security apply.

For the cooperation between partners in the consortium, the coordinator Fraunhofer Gesellschaft established a dedicated document management platform, based on OpenText Content Server. Data relevant to multiple partners will be stored and retained on this infrastructure. The content server infrastructure underlies the data protection responsibilities of the Fraunhofer Gesellschaft.

Storing of personal data will only occur with explicit prior informed consent of subjects, based on the informed consent procedures as laid out in D11.1.

6 Ethical aspects

Regarding the ethical and legal issues impacting data sharing, certain provisions have already been implemented in the project ethics work package (WP11). D11.1 provides information on the stakeholder involvement, selection and recruitment as well as the informed consent procedure. In D11.2 information on the compliance of the consortium towards the collection of personal data and their handling over the life cycle of the project is provided.

7 References

[1] European Commission, Research & Innovation, Participant Portal H2020 Online Manual, http://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/data-management_en.htm

8 Annex – Dataset details

The following paragraphs 8.1 to 8.21 present the tables with the information on the datasets 1 to 21.

8.1 Dataset no.1 – User expectations and goals (ACCIONA)

Table 3 Dataset no.1 – User expectations and goals (ACCIONA)

USER EXPECTATIONS AND GOALS	
Data Identification	
Dataset description	A compilation of expectations and goals from stakeholders of port use cases in PortForward, as well as other external port stakeholders potentially interested in PortForward developments. The dataset includes as well specific information about each port use case: main stakeholders, port processes, hinterland transportation and urban environment, and current port systems.
Source	Data provided by the owners of each port use case (port authority and supporting technical partners), basing on available port documentation, visits to the ports, and meetings/focus groups with port stakeholders. Additionally, inputs from other external stakeholders are gathered through an online survey.
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Each partner is responsible for the data provided to the data set.
Partner in charge of data collection	ACCIONA
Partner in charge of data analysis	ACCIONA
Partner in charge of data storage	ACCIONA
Related WP(s) and task(s)	WP1, T1.1

USER EXPECTATIONS AND GOALS	
Standards	
Info about metadata (production and storage dates, places) and documentation?	All relevant data including metadata (date produced, stored, modified) will be stored on the project's platform provided by IFF
Standards, format, estimated volume of data	MS office formats (.docx and .xlsx) and .pdf format for the final reports/documents; files expected to be smaller than 20 MB. For the collection of inputs from external stakeholders, data is collected through Google Forms, and will then be exported to the previous formats.
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	Data is relevant for subsequent analysis and elaboration of use cases that will constitute the basis for developing the requirements specification for PortForward framework development.
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	The deliverable collecting end user expectations and goals (D1.1) is made Public.
Data sharing, re-use, distribution, publication (How?)	D1.1 will be published through the project web site. The European Commission may publish the deliverable as well in CORDIS platform.
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	The only personal data obtained are those from the online survey for collecting inputs from external stakeholders. The survey explicitly asks for the consent of the subjects to collect this information.
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored on the project's platform provided by IFF during the lifetime of the

USER EXPECTATIONS AND GOALS
	project; data storage after the project end yet to be defined

8.2 Dataset no.2 – Use case restrictions (VIGO)

Table 4 Dataset no.2 – Use case restrictions (VIGO)

USE CASE RESTRICTIONS	
Data Identification	
Dataset description	Use case restrictions
Source	Data provided by partners for analysis of the port use cases
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	N/A
Partner in charge of data collection	APV-ACCIONA
Partner in charge of data analysis	APV-ACCIONA
Partner in charge of data storage	APV-ACCIONA
Related WP(s) and task(s)	WP1, T1.1
Standards	
Info about metadata (production and storage dates, places) and documentation?	All relevant data including metadata will be stored on the project's platform provided by IFF
Standards, format, estimated volume of data	MS office formats (.docx and .xlsx) and .pdf for the final report; files expected to be smaller than 5MB
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	Use case analysis is developed to identify features and constraints from current

USE CASE RESTRICTIONS	
	management processes that shall be addressed by the project
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Public report
Data sharing, re-use, distribution, publication (How?)	Publication through the project web site. The European Commission may publish the deliverable in CORDIS platform as well.
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	N/A
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored on the project's platform provided by IFF

8.3 Dataset no.3 – Technical specifications (IFF/ LEITAT)

Table 5 Dataset no.3 – Technical specifications (IFF/ LEITAT)

TECHNICAL SPECIFICATIONS	
Data Identification	
Dataset description	Very high scope of technical specifications related to the PortForward framework. Including functional and non-functional requirements to achieve the proposed objectives. This dataset will act as a base for the creation of the PortForward architecture in WP2.

TECHNICAL SPECIFICATIONS	
Source	Technical partners and port authorities, who should state which are their technical requirements to achieve the expected results.
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	TBD
Partner in charge of data collection	IFF
Partner in charge of data analysis	LEITAT
Partner in charge of data storage	TBD
Related WP(s) and task(s)	WP1, T1.3
Standards	
Info about metadata (production and storage dates, places) and documentation?	The documentation and images related to this dataset will be stored in the project text repository.
Standards, format, estimated volume of data	All the files are expected to be stored in default MS Office format (docx, xlsx, pptx) and pdf. In the case of images, the default format should be svg if possible or png or jpg otherwise. The different files are expected to be below the 10 MB mark.
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	The technical specification and the requirements contained within this dataset will be used as part of the base for the PortForward architecture, containing and defining the maximum capabilities of the different systems to be developed and the minimum acceptable conditions that should be addressed.
Data access policy / Dissemination level: confidential (only for members of the	Confidential (only to consortium members)

TECHNICAL SPECIFICATIONS	
Consortium and the Commission Services) or Public	
Data sharing, re-use, distribution, publication (How?)	Sharing internally within the consortium through the project repository
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	Not expected to collect personal data.
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	The documents related to the dataset should be kept in the project text repository for as long as the project is in execution.

8.4 Dataset no.4 – KPI catalogue (MARTE)

Table 6 Dataset no.4 – KPI catalogue (MARTE)

KPI CATALOGUE	
Data Identification	
Dataset description	Set of KPIs for assessment of the technical performance and the business and the sustainability impact of port services, processes and systems
Source	Data processed and provided by each project partner involved in the development of the use case
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Each partner is responsible for the set of Key Performance Indicators he has identified
Partner in charge of data collection	MARTE

KPI CATALOGUE	
Partner in charge of data analysis	MARTE
Partner in charge of data storage	MARTE
Related WP(s) and task(s)	WP1, T1.4
Standards	
Info about metadata (production and storage dates, places) and documentation?	All relevant data, including metadata (produced, stored and modified data), will be stored on the project platform provided by IFF
Standards, format, estimated volume of data	MS office formats (.docx and .xlsx) and .pdf format for the final reports/documents
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	KPI catalogue will be presented to end users through PortForward Dashboard. It will be also used and inserted in several PortForward blocks (e.g. DSS)
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	KPI Catalogue is confidential (only for the members of Consortium and Commission Services)
Data sharing, re-use, distribution, publication (How?)	KPI catalogue will be presented to port end users through PortForward Dashboard. It will be inserted in a report shared with the members of Consortium through an upload on the project platform provided by IFF
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	N/A
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored on the project platform provided by IFF during the lifetime of the

KPI CATALOGUE	
	project; data storage after the end of the project has yet to be defined

8.5 Dataset no.5 – System architecture incl. existing port systems (LEITAT)

Table 7 Dataset no.5 – System architecture incl. existing port systems (LEITAT)

SYSTEM ARCHITECTURE incl. existing port systems	
Data Identification	
Dataset description	Architecture of the system to be detailed and developed during the project. It will contain the very high-level detail of PortForward services and interactions among them.
Source	Use case owners and technical services developer partners.
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	N/A
Partner in charge of data collection	LEITAT
Partner in charge of data analysis	LEITAT
Partner in charge of data storage	LEITAT
Related WP(s) and task(s)	WP2, T2.1, T2.2, T2.3, T2.4
Standards	
Info about metadata (production and storage dates, places) and documentation?	All the documentation including document, files, tables and images will be stored in the project's text repository provided by IFF.
Standards, format, estimated volume of data	All the files are expected to be stored in default MS Office format (docx, xlsx, pptx) and pdf. In the case of images, the default format should be

SYSTEM ARCHITECTURE incl. existing port systems	
	svg if possible or png or jpg otherwise. The different files are expected to be below the 10 MB mark.
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	The main purpose of this dataset is to guide the development and interactions of the different services and parts developed within the project scope. It is expected to act as the very basis of the PortForward framework.
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	The details of the architecture should be kept confidential, due to the customizations and adaptations needed to match the data of the services already existing in the port.
Data sharing, re-use, distribution, publication (How?)	The general design of the architecture could be made public but specific details related with IPR should be kept confidential.
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	N/A
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	The architecture design should be kept in the project text repository for as long as the project is in execution.

8.6 Dataset no.6 – People and assets tracking data (LEITAT)

Table 8 Dataset no.6 – People and assets tracking data (LEITAT)

PEOPLE AND ASSETS TRACKING DATA	
Data Identification	
Dataset description	Converged information of services plus predictions of location of people related to the different services available within the city.
Source	Different systems already available, new services to be deployed within the PortForward platform, specially the services developed in Task 4.1.
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	N/A
Partner in charge of data collection	LEITAT
Partner in charge of data analysis	LEITAT
Partner in charge of data storage	LEITAT
Related WP(s) and task(s)	WP4, T4.1
Standards	
Info about metadata (production and storage dates, places) and documentation?	Data generated by the different services associated to this dataset will be stored in dedicated databases. Deliverables, images and documentation will be stored in the text repository provided by IFF.
Standards, format, estimated volume of data	The data generated is expected to be stored in the specific format of the chosen database and accessible through its standard means. The volume of data generated and needed to produce relevant predictions is expected to be high, counting around several GB of information.

PEOPLE AND ASSETS TRACKING DATA	
	The deliverables and documentation are expected to be stored in default MS Office format (docx, xlsx, pptx) and pdf. In the case of images, the default format should be svg if possible or png or jpg otherwise. The different files are expected to be below the 10 MB mark.
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	The main purpose of this data is to provide relevant information for the pilot owner and the city, interconnecting port and city and letting authorities anticipate the needs and demand.
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	All the data collected from the already available systems should be kept confidential in order to avoid IPR and confidentiality issues. The report on the tracking system will be public but will only include non-sensitive data.
Data sharing, re-use, distribution, publication (How?)	The data generated by the service could be made public as long as it is anonymous.
Embargo periods (if any)	The general service could be re-used in different use cases and should be distributed, but the data needed by the service to work should be kept confidential.
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	We will not handle any personal data without actively asking for prior written consent (as defined in the ethics deliverables D11.1 and D11.2)
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	The data generated should be stored in dedicated databases. The documents related to the dataset should be kept in the project text repository for as long as the project is in execution.

8.7 Dataset no.7 – AR Remote assistance data (Ubimax)

Table 9 Dataset no.7 – AR Remote assistance data (Ubimax)

AR Remote assistance data	
Data Identification	
Dataset description	This data can be used to support video and audio remote assistance.
Source	Data released by project partners. We need data that are important for the pilot and that we want to display. (Use Case must still be clarified) We will utilize the data of the digital twin (CPS) to unambiguously locate and visualize the affected infrastructure and to communicate also via the digital infrastructure.
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Depending on which data is additionally displayed by the terminal.
Partner in charge of data collection	Ubimax, Data from the digital twin, data from the IoT middleware or port data
Partner in charge of data analysis	Ubimax, Data from the digital twin, data from the IoT middleware or port data
Partner in charge of data storage	Ubimax, Data from the digital twin, data from the IoT middleware or port data
Related WP(s) and task(s)	WP3,4,6
Standards	
Info about metadata (production and storage dates, places) and documentation?	Documentation will be stored on the project's platform provided by IFF
Standards, format, estimated volume of data	Localization data and GPS data can be important here video and audio
Data exploitation and sharing	

AR Remote assistance data	
Data exploitation (purpose/use of the data analysis)	The data will be used by the remote system and to assist the terminal worker
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Confidential. The report on the Remote Assistance tool will be public but will only include non-sensitive data.
Data sharing, re-use, distribution, publication (How?)	N/A
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	If personal data are used, it will be adequately protected.
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored on the project's platform provided by IFF during the lifetime of the project; data storage after the project end yet to be defined

8.8 Dataset no.8 – AR pilot assistance data (Ubimax)

Table 10 Dataset no.8 – AR pilot assistance data (Ubimax)

AR pilot assistance data	
Data Identification	
Dataset description	Data supporting the pilot by displayed information in an AR solution.
Source	Data released by project partners. We need data that are important for the pilot and that we want to display. (Use Case must still be clarified)
Partners activities and responsibilities	

AR pilot assistance data	
Partner owner of the data; copyright holder (if applicable)	We need data from external devices that are used in the port and that a pilot needs to take over the ship
Partner in charge of data collection	Ubimax, Data from the digital twin, data from the IoT middleware or port data
Partner in charge of data analysis	Ubimax, Data from the digital twin, data from the IoT middleware or port data
Partner in charge of data storage	Ubimax, Data from the digital twin, data from the IoT middleware or port data
Related WP(s) and task(s)	WP3,4,6
Standards	
Info about metadata (production and storage dates, places) and documentation?	Documentation will be stored on the project's platform provided by IFF
Standards, format, estimated volume of data	Structed and semi structed data, .xml, .csv to integrate it in our system
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	The data is used to show the pilot the necessary information in AR.
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Confidential. The report on the AR-based Pilot-assistance system will be public but will only include non-sensitive data.
Data sharing, re-use, distribution, publication (How?)	N/A
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	If personal data are used, it will be adequately protected
Archiving and preservation (including storage and backup)	

AR pilot assistance data	
Data storage (including backup): Where? For how long?	Data will be stored on the project's platform provided by IFF during the lifetime of the project; data storage after the project end yet to be defined

8.9 Dataset no.9 – Stowage optimization data (ACCIONA)

Table 11 Dataset no.9 – Stowage optimization data (ACCIONA)

STOWAGE OPTIMIZATION DATA	
Data Identification	
Dataset description	Data (features, location) about assets to be loaded/unloaded to/from vessels, data about vessels operations, stowage optimization plans, weather data, environmental data, data of users accessing these data.
Source	Port and shipping company systems (e.g. AIS), weather services, environment monitoring systems, cargo and people tracking systems, mobile apps.
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	To be defined yet. In principle owner will be the corresponding port authority and/or shipping company.
Partner in charge of data collection	ACCIONA
Partner in charge of data analysis	ACCIONA
Partner in charge of data storage	ACCIONA
Related WP(s) and task(s)	WP4, T4.4
Standards	

STOWAGE OPTIMIZATION DATA	
Info about metadata (production and storage dates, places) and documentation?	All relevant data including metadata (data produced, stored, modified) will be stored in PortForward platform according to data models to be defined within the project.
Standards, format, estimated volume of data	Standards and formats will be adopted according to the data modelling strategy that will be defined within the project. Volume of data yet to be estimated, but it probably will not be more than a few gigabytes.
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	This data will be relevant for port authorities, shipping companies and other port stakeholders that can benefit from the optimization of stowage operations at ports. Data can be reused for calculating port KPIs, display in PortForward dashboard, etc.
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Report about the implementation of stowage optimization service will be made public through Deliverable D4.4, but any sensitive data (e.g. cargo details) will not be included in this report.
Data sharing, re-use, distribution, publication (How?)	D4.4 will be published through the project web site. The European Commission may publish the deliverable as well in CORDIS platform.
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	Only personal data that could be gathered are of potential users of the service, and data from people tracking. Written consent will be obtained from any subject to collect this type of data.
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored on PortForward framework; data storage after the project end yet to be defined

8.10 Dataset no.10 – Sustainability assessment data (LEITAT)

Table 12 Dataset no.10 – Sustainability assessment data (LEITAT)

SUSTAINABILITY ASSESSMENT DATA	
Data Identification	
Dataset description	Data related to environmental, economic and social impacts caused by container terminal and port activities resulting from the project research actions.
Source	Data provided by project partners (Port Authorities) and data obtained from specific databases related to environmental and social impact analysis (e.g.: Ecoinvent, Gabi database, Social Hotspot DB).
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Each partner will be responsible for the data provided to LEITAT (inventory data needed to conduct the sustainability assessment).
Partner in charge of data collection	LEITAT will be responsible of the data generated from the project research actions (environmental, economic and social impact data of Container Terminal operations and Port operations).
Partner in charge of data analysis	No copyright holders from data produced by LEITAT.
Partner in charge of data storage	LEITAT
Related WP(s) and task(s)	LEITAT
Standards	
Info about metadata (production and storage dates, places) and documentation?	All the data including metadata (data produced, stored, modified) will be stored in dedicated databases. Deliverables, images and documentation will be stored in the text repository provided by IFF.

SUSTAINABILITY ASSESSMENT DATA	
Standards, format, estimated volume of data	The volume of data needed and generated to produce our calculations and predictions is expected to be high, counting around several GB of information. The deliverables and documentation are expected to be stored in default MS Office format (docx, xlsx, pptx) and pdf. In the case of images, the default format should be svg if possible or png or jpg otherwise. The different files are expected to be below the 10 MB mark.
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	The main purpose of this data is to provide relevant information for the development of the Green Yard Scheduler and to evaluate the impact of the Green Yard Scheduler proposals on sustainability of Terminal Container and Port operations.
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	All the data collected from project partners will be kept confidential in order to avoid IPR and confidentiality issues.
Data sharing, re-use, distribution, publication (How?)	The data generated by the research conducted will be made public (according to the deliverable type) but always will be kept anonymous if required by project partners.
Embargo periods (if any)	Data provided by the research conducted could be re-used in similar projects if needed and will be shared with scientific audience in conferences and similar events or through publications.
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	N/A
Archiving and preservation (including storage and backup)	

SUSTAINABILITY ASSESSMENT DATA	
Data storage (including backup): Where? For how long?	The data provided by project partners and data generated by LEITAT will be stored in dedicated databases.
	The documents related to the dataset should be kept in the project text repository provided by IFF for as long as the project is in execution.

8.11 Dataset no.11 – Yard operations data (BRUNEL)

Table 13 Dataset no.11 – Yard operations data (BRUNEL)

YARD OPERTIONS DATA	
Data Identification	
Dataset description	All relevant data for the development and testing of the green yard scheduling, including cost per box, customer service data, fuel emissions, total energy consumption, etc.
Source	Data provided by the port authorities
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Port authorities
Partner in charge of data collection	Brunel
Partner in charge of data analysis	Brunel
Partner in charge of data storage	TBD
Related WP(s) and task(s)	WP5 / T5.2, T5.3
Standards	
Info about metadata (production and storage dates, places) and documentation?	TBD
Standards, format, estimated volume of data	TBD

YARD OPERTIONS DATA	
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	Data will be used for the development and testing of the green yard scheduler
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	The reports using the data (sustainability assessment, environmental indicators) and the method "production version of the green yard scheduler" will be public, the data though will remain confidential
Data sharing, re-use, distribution, publication (How?)	Through the public deliverables
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	N/A
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	TBD

8.12 Dataset no.12 – Digital twin; 3D model, process and sensor data (IFF)

Table 14 Dataset no.12 – Digital twin; 3D model, process and sensor data (IFF)

DIGITAL TWIN; 3D model, process and sensor data	
Data Identification	
Dataset description	The Digital Twin of a port is meant to be a virtual digitized representation of the port environment, infrastructure, handling equipment, cargo and the referring processes. For that approach it is required that several data sets are part of the Digital Twin:

DIGITAL TWIN; 3D model, process and sensor data
	- Spatial Model 3D data (topography, buildings and infrastructure) - Textures - Features of 3D elements (e.g. annotation of storable cargo for a storage location) - Logistics Model - Assets with their features - Cargo with its features - Description of performable processes (e.g. handling operations) - Operational Data - Any process related data that is gathered in the specific use case by IoT or other sensors (e.g. IDs of Cargo, Locations of Cargo and Assets, Status of Cargo, Assets and storage locations, etc.) - Data from external sources (e.g. weather data, vessel movement data, etc.)
Source	The spatial model data and the logistics model data need to be collected for the referring port. These data are static. The dynamic operational data can come from several sources (e.g. from external sources, from IoT platform, etc.) – this needs to be further specified, based on the use case definitions and the overall PortForward architecture.
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Fraunhofer IFF will build the Digital Twin for the Port of Magdeburg. The general structure of the Digital Twin will be provided to all partners for individual implementations in the single use cases. For the implementation of the use cases in the Port of Magdeburg, the Port and Fraunhofer IFF

DIGITAL TWIN; 3D model, process and sensor data	
	will be the data owners and copyright holders of the data. This will be further specified within the use case definition.
	All following entries in this table refer to the specific implementation of the use cases in the Port of Magdeburg.
Partner in charge of data collection	Fraunhofer IFF and Port of Magdeburg
Partner in charge of data analysis	Fraunhofer IFF
Partner in charge of data storage	Fraunhofer IFF and Port of Magdeburg (IoT data may be also stored by IMEC – tbc)
Related WP(s) and task(s)	T1.2 / T2.2 / T2.3 / WP3 / WP4 / T6.2 / T6.4
Standards	
Info about metadata (production and storage dates, places) and documentation?	tbd
Standards, format, estimated volume of data	tbd
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	The data will be mainly used to assist port operational and strategic processes – therefor the digital twin will be closely connected to the decision support system (T6.2) and the PortForward Dashboard (T6.4).
	Furthermore, data from the digital twin can be provided to AR assistance solutions (WP 4).
	The digital twin in connection with the VR visualization will be provided for demonstration (e.g. on the trade fair 'transport logistics in Munich 2019).
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	tbd – based on the final use case definition – there will be applications in the Digital Twin which can be published. It may be for specific objects and processes that data are confidential

DIGITAL TWIN; 3D model, process and sensor data	
Data sharing, re-use, distribution, publication (How?)	tbd
Embargo periods (if any)	tbd
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	tbd - based on the final use case definition
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data storage will be mainly hosted by Fraunhofer IFF and Port of Magdeburg (port server, Fraunhofer servers, VFK platform) (IoT data may be also stored by IMEC – tbc)

8.13 Dataset no.13 – Decision support system (IFF)

Table 15 Dataset no.13 – Decision support system (IFF)

DECISION SUPPORT SYSTEM	
Data Identification	
Dataset description	The Decision Support System will assist port operations and strategic decisions based on indicators. The DSS will provide decision support for different timescales: - real-time DS: supporting operational processes, e.g. in cargo handling - short-time DS: supporting process planning, e.g. scheduling of handling processes - long-time DS: supporting strategical planning, e.g. investment into new resources The DSS will mainly process indicators and process input data and derive DS indicators out of these inputs.

DECISION SUPPORT SYSTEM	
	The data of the DSS will be closely connected to the KPI catalogue and their referring representation in the PortForward Dashboard.
Source	Data inputs for the indicators will be mainly collected from IoT and other sensor sources.
	For strategic DS infrastructure related inputs from the Digital Twin are relevant.
	The sources for indicators need to be further specified based on KPI definition (T1.4) and the overall PortForward architecture (T2.2).
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Fraunhofer IFF will provide a generic DSS to the consortium and implement a specific tool for the use cases of the Port of Magdeburg.
	For the implementation of the use cases in the Port of Magdeburg, the Port and Fraunhofer IFF will be the data owners and copyright holders of the data. This will be further specified within the use case definition.
	All following entries in this table refer to the specific implementation of the use cases in the Port of Magdeburg.
Partner in charge of data collection	Fraunhofer IFF
Partner in charge of data analysis	Fraunhofer IFF
Partner in charge of data storage	Fraunhofer IFF + Port of Magdeburg
Related WP(s) and task(s)	T1.4 / T2.2 /T2.3 / WP3 / T6.1 / T6.4
Standards	
Info about metadata (production and storage dates, places) and documentation?	tbd
Standards, format, estimated volume of data	tbd

DECISION SUPPORT SYSTEM	
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	The data will be mainly used to assist port operational and strategic processes – therefor the DSS will be closely connected to the Digital Twin (T6.1) and the PortForward Dashboard (T6.4). An approach can be to fully integrate the DSS into the Dashboard – this will be clarified with WP6 and T2.2.
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	tbd – based on the final use case definition – there will be applications of the DSS which can be published. It may be for specific objects and processes that data are confidential.
Data sharing, re-use, distribution, publication (How?)	tbd
Embargo periods (if any)	tbd
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	tbd - based on the final use case definition
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data storage will be mainly hosted by Fraunhofer IFF and Port of Magdeburg (port server, Fraunhofer servers, VFK platform) (IoT data may be also stored by IMEC – tbc)

8.14 Dataset no.14 – Stakeholder survey data (MARTE)

Table 16 Dataset no.14 – Stakeholder survey data (MARTE)

STAKEHOLDER SURVEY DATA	
Data Identification	
Dataset description	Data related to existing technological equipment that is implemented to support sea-land logistics processes in the ports
Source	Data gathered and elaborated through Stakeholder surveys by project partners involved in the use cases
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Each partner is responsible for the Stakeholder survey data he has gathered
Partner in charge of data collection	MARTE
Partner in charge of data analysis	MARTE
Partner in charge of data storage	MARTE
Related WP(s) and task(s)	WP7, T7.1
Standards	
Info about metadata (production and storage dates, places) and documentation?	All relevant data, including metadata (produced, stored and modified data), will be stored on the project platform provided by IFF
Standards, format, estimated volume of data	MS office formats (.docx and .xlsx) and .pdf format for the final reports/documents
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	Stakeholder survey data are relevant to develop a gap analysis between the existing tools and port stakeholder needs in the implementation of the activities

STAKEHOLDER SURVEY DATA	
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Stakeholder survey data are confidential (only for the members of Consortium and Commission Services).
Data sharing, re-use, distribution, publication (How?)	Stakeholder survey data are relevant to develop use cases. The analysis of data will be inserted in the report related to T7.1. It will be shared with the members of Consortium through an upload on the project platform provided by IFF
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	N/A
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored on the project platform provided by IFF during the lifetime of the project; data storage after the project end has yet to be defined

8.15 Dataset no.15 – Use case implementation and evaluation data (MARTE)

Table 17 Dataset no.15 – Use case implementation and evaluation data (MARTE)

USE CASE IMPLEMENTATION AND EVALUATION DATA	
Data Identification	
Dataset description	Data related to the implementation of PortForward tools based on the main activities that take place in each port. Results of the comparative analysis (KPIs)

USE CASE IMPLEMENTATION AND EVALUATION DATA	
Source	Data processed and provided by each project partner involved in the development of the use case
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Each partner is responsible for the Use case implementation and evaluation data he has elaborated
Partner in charge of data collection	MARTE
Partner in charge of data analysis	MARTE
Partner in charge of data storage	MARTE
Related WP(s) and task(s)	WP7, T7.2, T7.3
Standards	
Info about metadata (production and storage dates, places) and documentation?	All relevant data, including metadata (produced, stored and modified data), will be stored on the project platform provided by IFF
Standards, format, estimated volume of data	MS office formats (.docx and .xlsx) and .pdf format for the final reports/documents; files are expected to be smaller than 5MB
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	Use case implementation and evaluation data are relevant to develop use cases and comparative analysis
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Use case implementation and evaluation data are public.
Data sharing, re-use, distribution, publication (How?)	Use case implementation and evaluation data will be inserted in the public reports named "Use case implementation report" and "Use case evaluation report". They will be shared with the members of Consortium through an upload on

USE CASE IMPLEMENTATION AND EVALUATION DATA	
	the project platform provided by IFF. Provided sufficient argumentation, sensitive use case implementation data could be excluded from the report.
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	N/A
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored on the project platform provided by IFF during the lifetime of the project; data storage after the project end has yet to be defined

8.16 Dataset no.16 – Standardization (IFF)

Table 18 Dataset no.16 – Standardization (IFF)

STANDARDIZATION	
Data Identification	
Dataset description	This data set will list relevant identified standards and structure them related to the application fields of PortForward. Furthermore, the data set will list identified standardization gaps and project-related approaches for standardization.
Source	Research / Project Workshops
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	whole consortium
Partner in charge of data collection	whole consortium

STANDARDIZATION	
Partner in charge of data analysis	Research Partners
Partner in charge of data storage	Fraunhofer IFF (web repository)
Related WP(s) and task(s)	WP8
Standards	
Info about metadata (production and storage dates, places) and documentation?	tbd
Standards, format, estimated volume of data	tbd
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	The data shall be used to trigger activities for new standards.
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Public (D8.1)
Data sharing, re-use, distribution, publication (How?)	tbd
Embargo periods (if any)	tbd
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	No
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Web repository for the duration of project + 1 year

8.17 Dataset no.17 – Technology scouting data (CORE)

Table 19 Dataset no.17 – Technology scouting and technology watch data (CORE)

TECHNOLOGY SCOUTING AND TECHNOLOGY WATCH DATA	
Data Identification	
Dataset description	Research data for available port operations technologies and data regarding the current state-of the-art already applied or in research
Source	Interviews with partners and other port authorities, desk research on the web; inputs from all partners in their respective fields
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Desk research data will be public; data from interviews belong to the interviewees and the key findings will be shared with the consortium
Partner in charge of data collection	CORE
Partner in charge of data analysis	CORE
Partner in charge of data storage	CORE
Related WP(s) and task(s)	WP8 T8.3, WP9 T9.5
Standards	
Info about metadata (production and storage dates, places) and documentation?	All relevant data including metadata (date produced, stored, modified) will be stored on the project's platform provided by IFF
Standards, format, estimated volume of data	MS office formats (.docx and .xlsx) and .pdf format for the final reports/documents; files expected to be smaller than 5MB
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	Data will be a core input for D8.3 Roadmap for the project results' uptake and are necessary for the positioning of the PortForward technologies

TECHNOLOGY SCOUTING AND TECHNOLOGY WATCH DATA	
	against the state-of-the-art and an important part of the project-internal Knowledge Management System
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Raw research data are for internal use; the data and conclusions for the report will be public
Data sharing, re-use, distribution, publication (How?)	Raw research data are for internal use; the data and conclusions for the report will be public
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	Personal data of the interviewees will be protected, and interviewee consent will be asked for prior to the interview
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored locally by the responsible partner and on the project platform provided by IFF during the lifetime of the project; data storage after the project end yet to be defined

8.18 Dataset no.18 – Market, competition and customer data (MARTE)

Table 20 Dataset no.18 – Market, competition and customer data (MARTE)

MARKET, COMPETITION AND CUSTOMER DATA	
Data Identification	
Dataset description	• Needs of potential platform customers • Identification of the relevant attributes (i.e. value drivers) that will characterize both the individual modules and the entire platform • Market demand

MARKET, COMPETITION AND CUSTOMER DATA	
Source	The market analysis will be carried out using management tools applied to the reference market. All partners will provide information for their respective markets
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Each partner is responsible for the Market, competition and customer data he has elaborated
Partner in charge of data collection	MARTE
Partner in charge of data analysis	MARTE, CORE, IFF
Partner in charge of data storage	MARTE
Related WP(s) and task(s)	WP8, T8.4, T8.5
Standards	
Info about metadata (production and storage dates, places) and documentation?	All relevant data, including metadata (produced, stored and modified data), will be stored on the project platform provided by IFF
Standards, format, estimated volume of data	MS office formats (.docx and .xlsx) and .pdf format for the final reports/documents
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	Market, competition and customer data are relevant to identify target buyers and value drivers. It is also important in order to develop a branding and communication target
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Market, competition and customer data are confidential (only for the members of Consortium and Commission Services)
Data sharing, re-use, distribution, publication (How?)	Market, competition and customer data

MARKET, COMPETITION AND CUSTOMER DATA	
	will be inserted in the report related to T8.4 and T8.5.
	It will be shared with the members of Consortium through an upload on the project platform provided by IFF
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	N/A
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored on the project platform provided by IFF during the lifetime of the project; data storage after the project end has yet to be defined

8.19 Dataset no.19 – Business model canvas elements (CORE)

Table 21 Dataset no.19 – Business model canvas elements (CORE)

BUSINESS MODEL CANVAS ELEMENTS	
Data Identification	
Dataset description	Data related to the key resources, activities, partners, channels, customer relationships, possible revenues and the cost structure for the commercialization of the PortForward results
Source	Input from all consortium partners through various formats (workshops, interviews, questionnaires, sales and cost data, etc.)
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	All involved partners

BUSINESS MODEL CANVAS ELEMENTS	
Partner in charge of data collection	CORE
Partner in charge of data analysis	CORE
Partner in charge of data storage	CORE
Related WP(s) and task(s)	WP8 T8.6 and T8.7
Standards	
Info about metadata (production and storage dates, places) and documentation?	All relevant data including metadata (date produced, stored, modified) will be stored on the project's platform provided by IFF
Standards, format, estimated volume of data	MS office formats (.docx and .xlsx) and .pdf format for the final reports/documents; files expected to be smaller than 5MB
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	Data will be used for D8.6 commercialisation plan and D8.7 Final business model
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Confidential for the members of the consortium
Data sharing, re-use, distribution, publication (How?)	Only within the consortium
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	Not expected to collect personal data.
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored locally by the responsible partner and on the project's platform provided by IFF during the lifetime of the project; data storage after the project end yet to be defined

8.20 Dataset no.20 – IPR Catalogue (CORE)

Table 22 Dataset no.20 – IPR Catalogue (CORE)

IPR Catalogue	
Data Identification	
Dataset description	IPR resulting from the project research actions, patent search data, patent applications and license documents
Source	Data provided by partners for the exploitable results; patent databases
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Each partner is responsible for the IPR data regarding the results they produce
Partner in charge of data collection	CORE
Partner in charge of data analysis	CORE
Partner in charge of data storage	CORE
Related WP(s) and task(s)	WP9, T9.5
Standards	
Info about metadata (production and storage dates, places) and documentation?	All relevant data including metadata (date produced, stored, modified) will be stored on the project's platform provided by IFF
Standards, format, estimated volume of data	MS office formats (.docx and .xlsx) and .pdf format for the final reports/documents; files expected to be smaller than 5MB
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	IPR catalogue is relevant for reporting to the EC and the PO; patent search data help the consortium identify if a patent could be granted for their results

IPR Catalogue	
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	IPR Catalogue will be made public through their integration in the DMP, which is a public report;
Data sharing, re-use, distribution, publication (How?)	Patent search data, patent application and license documents will only be shared with members of the Consortium
Embargo periods (if any)	IPR Catalogue public through posting of the DMP on the project website
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	N/A
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Data will be stored on the project's platform provided by IFF during the lifetime of the project; data storage after the project end yet to be defined

8.21 Dataset no.21 – IoT device/network communication and localization data (IMEC)

Table 23 Dataset no.21 – IoT device/network communication and localization data (IMEC)

IoT DEVICE/NETWORK COMMUNICATION AND LOCALIZATION DATA	
Data Identification	
Dataset description	IoT device/network communication and localization data
Source	Data generated by privately deployed LPWAN IoT networks (e.g. LoRaWAN, DASH-7) or provided by public LPWAN networks (SigFox, NB-IoT) Data transmitted by IoT devices over such

IoT DEVICE/NETWORK COMMUNICATION AND LOCALIZATION DATA	
	networks for monitoring, localization or device management purposes.
Partners activities and responsibilities	
Partner owner of the data; copyright holder (if applicable)	Partner owning the end devices (for data generated by IoT devices) or partner/external party owning the network infrastructure (for data generated by the IoT network infrastructure)
Partner in charge of data collection	IMEC
Partner in charge of data analysis	IMEC
Partner in charge of data storage	IMEC
Related WP(s) and task(s)	WP3 T3.1, T3.2, T3.4 and WP4 T4.1 (localization)
Standards	
Info about metadata (production and storage dates, places) and documentation?	All data will be stored in the IoT middleware platform provided by IMEC in WP3.
Standards, format, estimated volume of data	Preferred data format for transmission and storage of data will be JSON. Alternative data formats for data transport such as TLV, CBOR, etc. might be used. Size of individual data items will be in the order of a few bytes to several hundreds of bytes. The total number of items will depend on the number of end devices and their communication frequency. Subsequent data algorithms and data analysis will result in derived data, using the same data formats and stored in the same platform.
Data exploitation and sharing	
Data exploitation (purpose/use of the data analysis)	(Derived) data will serve as input for the realization of the targeted PortForward services.

IoT DEVICE/NETWORK COMMUNICATION AND LOCALIZATION DATA	
Data access policy / Dissemination level: confidential (only for members of the Consortium and the Commission Services) or Public	Confidential
Data sharing, re-use, distribution, publication (How?)	Sharing via APIs of the IoT middleware platform only to authorized and authenticated parties.
Embargo periods (if any)	N/A
Personal data protection: are they personal data? If so, have you gained (written) consent from data subjects to collect this information?	Potentially, some of the raw data can be personal data (e.g. localization data). In case such data is identified, either the data will be anonymized before transmission by the device or consent will be gained.
Archiving and preservation (including storage and backup)	
Data storage (including backup): Where? For how long?	Storage by IoT middleware platform: length duration of PortForward + duration of demonstrations after project (up for discussion). Shorter durations possible (in case data is no longer needed and can be safely removed) to reduce strain on storage system.