ACROBA

connect & produce through agile production

D9.13 “DATA MANAGEMENT PLAN (V2)”

WP9

Lead Beneficiary Partner Name: BFH

Delivery date 20220630

Dissemination level: Public

Version V1.0

Bern University of Applied Sciences

The ACROBA project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 101017284.

Approval Status

	Name and Surname	Role in the project	Partner
Author(s)	Norman U. Baier	Project Coordinator	BFH
Reviewed by		Participant partner Participant partner	CABKA AITIIP
Approved by	Norman U. Baier	Project Coordinator	BFH

History of Changes

Version	Date	Description of Changes	By
0.1	2022.05.31	First draft released	Norman U. Baier
0.2	2022.06.15	Revision first draft	Norman U. Baier
1.0	2022.06.28	Final version.	Norman U. Baier

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DISCLAIMER

The work described in this document has been conducted within the ACROBA project. This document reflects only the ACROBA consortium view, and the European Union is not responsible for any use that may be made of the information it contains.

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List of Tables

The ACROBA project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101017284.

List of Acronyms

ACRONYM	NAME
CA	Consortium Agreement
CDMP	Communication and Dissemination Master Plan
DMP	Data Management Plan
DPO	Data Protection Officer
EC	European Commission
EU	European Union
FAIR	Findable, Accessible, Interoperable, Re-usable
GA	Grant Agreement
GDPR	General Data Protection Regulation
IPR	Intellectual Property Right
WP	Work Package
WPL	Work Package Leader

Table 1. List of acronyms.

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1 EXECUTIVE SUMMARY

The methodology applied for the appropriate creation, management and storage of datasets was established in M3 within Deliverable D9.2, Data Management Plan (DMP), in the framework of Work Package (WP) 9 of Management and specifically Task 9.4: Data management. This methodology will be followed until the end of the project if any change needs to be done.

Therefore, this report is an update document of that D9.2, and of the first updating version D9.12 done in M12. These tasks are related to the research data that has been generated, modified, and used during the project lifetime per WP and per partner up to M18. The aim of this document is to understand if the plan is good enough to keep following the lines stablished so far, if changes are needed, or if new strategies or methodologies are to be added to the project.

There will be other updated versions of this plan in M36 (v3). The final version of the document will be delivered in month M42 (v4).

2 DATA SUMMARY

2.1 Types and formats of data generated

The project has generated different types of data during the first 18 months. The following Table 1 presents a list of formats used for each type of data generated so far (M0-M18).

Type of Data	Data format used
Enriched text documents	***.doc, *docx,**
Only-text documents (e.g., program codes)	*.txt, papyrus (.di, .notation, .uml),
Datasheets	*xlsx, *xml

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Type of Data	Data format used
Public distribution of official documents for presentations	*.pdf, or *.xps
Images	*.jpg, *png, *UML
Internal distribution of presentations	*pptx
Video files	*mp4
Audio files	none
Models/Algorithms	*.py, *ASCII,
CAD	none
CODE	.py, .c, .cpp, .dockerfile, xml, .log, . conf, .yaml
Diagrams	papyrus (.di, .notation, .uml), .docx, .pdf, *.pptx, .png
Policy	.pth
Reports	.docx, .pdf
Executable	.exe
Tables	.xlsx

Table 2. Format per data type used.

2.2 Data summary per WP

This section gives details of all the data generated during months M1-M18 of the project and per WP. These tables will be updated every 6 months and reported in new deliverables in M36 and M42.

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Indicate that FAIR (Findable, Accessible, Interoperable, Re-usable), ethics and legal GDPR (General Data Protection Regulation) data management have been considered to complete these tables.

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2.2.1 WP1: ACROBA Platform

WP1 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Requirements Traceability Matrix	Living deliverable that will collect all the requirements connected with the deliverables that satisfy them.	Industrial scenarios and use-cases	Yes. Reused data also originated in D4.1, D4.2, D5.1, D5.2 and D9.2	Report	.docx, .pdf	1 MB	All partners	Internal	Yes
Reference Architecture	Modules and interfaces identified and the proposed architecture specification. Use test cases verifying the functionality of the proposed architecture in its first stable version.	COPRA-AP architecture developed and use-cases	No	Report	.docx, .pdf	1 MB	All partners	Internal	Yes

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WP1 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Use case architecture diagrams	Technical file formats documenting the use cases according to the architectural principles.	Industrial scenarios and use-cases	Yes. Reused data from D4.1, D4.2, D5.1 and D5.2	Diagrams	papyrus (.di, .notation, .uml), .docx, .pdf, *.pptx	1 MB	All partners	Internal	No
ACROBA Platform	Final prototype of the Platform ready for adaptation and fine tuning in the Test cell (WP3).	Public software libraries	Yes, in the pilots	Code	source code (.py, .c, .cpp, .dockerfile, xml)	800 kB	All partners	Internal	Yes

Table 3. Data set WP1.

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2.2.2 WP2: Robot Cognitive Capabilities

WP2 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Robot Modules Architecture	Definition of the robotic skills required for implementing the generic robotic cell of WP3 and those in WP4 and WP5.	DEUSTO and SIGMA	Specific skill definition in D1.2	SysML Diagram and Report	.docx, UML, png	Unknown	All partners	Internal	No
Cognitive API (cAPI) of the Perception-Control Models	Algorithms implemented for identifying visual and contact features of the product state in T2.2. The perception-based control algorithms for implementing the robotic skills will be part of the cAPI.	SIGMA	No	Report, API, Code	.Doc, Github project	Unknown	All partners	Internal	No

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WP2 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Dynamic programming of robots	Details the implementations of the automatic robot task planners.	**BFH**	**No**	**Report, API, Code**	**.Doc, Github project, .drawio**	Unknown	All partners	Internal	No
Virtual Gym prototype	Functionalities of the Virtual Gym environment accompanied by a prototype of it based on an existing framework.	VICOM	No	Report, Executable	.Doc, .exe	Unknown	All partners	Internal	No
Deep Reinforcement Learning (DRL) module implementation	Implementation of the DRL algorithms chosen for optimization and generalization of the models developed in WP2 by taking into account simulation data and also real data, along with log files of the training process.	Development and testing process, mainly from DEUSTO	No	Source code, libraries, configuration and log files	.py, .log, .conf, .yaml	Unknown	All partners	Internal	Yes

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WP2 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Deep Reinforcement Learning (DRL) policies	Generated by the DRL Learning engine, representing robot skills and primitives	Generated by DEUSTO and MrNec during training process	No	Policy	.pth	Unknown	All partners	Internal	Yes
GUI questionnaires	A questionnaire was created to gather user requirements for the GUI/HMI of the ACROBA platform	consortium members	No	Google form/excel	.xlsx	1MB	All partners	Internal	No

Table 4. Data set WP2.

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2.2.3 WP3:

WP3 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Agile production cell outline	Proposed cell setup up and outline of generic tasks.	IMR	N/A	Presentation	pptx	10 MB	All partners	Internal	No

Table 5. Data set WP3.

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2.2.4 WP4: Lights Out Manufacturing Pilot Lines

WP4 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Medical device pilot line specifications	Pilot line setup, architecture within ACROBA and COPRA-AP, and necessary KPIs for the MedTech use-case.	STER	N/A	Report	.docx; .pdf	10MB	Partners	Internal	No
Plastic pilot line specifications	Pilot line setup, architecture within ACROBA and COPRA-AP, and KPIs for the plastic use cases.	MOS, CABKA	N/A	Report	.docx; .pdf	10MB	Partners	Internal	No

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WP4 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Lights out Pilot line use cases descriptions	Safety architecture and report, Operation manual and Maintenance manual, Declaration and certifications according to different legislation	USERS	N/A	Manuals, certificates	.docx; .pdf	500MB	Partners	Internal	No
Report on integration of the ACROBA platform to specific use cases	Integration of the ACROBA platform to the specific use cases.	USERS	N/A	Report	.docx; .pdf	10 MB	Partners	Internal	No
Lights out manufacturing uses cases	Final demonstration of ACROBA platform executing use cases.	USERS	N/A	Images, video	.jpg; .mp4	1 GB	Partners	External	Yes

Table 6. Data set WP4.

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2.2.5 WP5: Collaborative Assembly Pilot Lines

WP5 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Electronic components pilot line specifications	Pilot line setup and necessary KPIs for the Electronic use-case.	Use case (IKOR)	Yes, the report will be in line with what was said in D1.1	Report	.doc, .docx, .pdf	Unknown, low	All partners	Internal	No
Electric motor pilot line specifications	Pilot line setup and necessary KPIs for the electrical use-case	Use case (ICPE)	Yes, the report will be in line with what was said in D1.1	Report	.doc, .docx, .pdf	Unknown, low	All partners	Internal	No
Methodology to perform feasibility tests on HW&SW	HW&SW to be tested, how it will be tested and by who	IKOR, ICPE, STAM, VIC, NUTAI	Yes, some information will be extracted from D5.1 and D5.2	Report	.doc, .docx, .pdf	Unknown, low	All partners	Internal	No

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WP5 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Conclusion on feasibility tests on HW&SW	Results of the feasibility studies	IKOR, ICPE, STAM, VIC, NUTAI	Yes, in line with D5.7	Report	.doc, .docx, .pdf	Unknown, low	All partners	Internal	No

Table 7. Data set WP5.

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2.2.6 WP6: Collaborative Assembly Pilot Lines

WP6 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Test scenario definition	Description of test scenarios and test cases to confirm the KPIs of the Acroba platform.	D1.1, D4.1, D4.2, D5.1, D5.2	No	Report	.docx,	Unknown, low	All partners	Internal	No
D 6.1	This deliverable documents the use case requirements, KPIs, Test scenarios and test cases, it provides also a mapping of the different documnets	Use cases	D1.1. D4.1, D4.2, D5.1, D5.2	Enriched text documents, Datasheets, Public distribution of official documents for presentations	.docx .xlsx .pdf	1.5MB	All partners	Internal	No
Test cases	These are testing documents use cases created	Use cases	No	Datasheets	.xlsx	10MB	All partners	Internal	No

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WP6 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Templates	These are testing related templates that are created by BFH	own creation	No	Enriched text documents, Datasheets	.docx .xlsx	7MB	All partners	Internal	No
Testing guidelines	This is the guideline for testing created by BFH	own creation	No	enriched test documnet	.docx	1MB	All partners	Internal	No
testing schedules	This is the globle testing schedule created by BFH for the ACROBA project	own creation	No	Datasheets	.xlsx	150kB	All partners	Internal	No

Table 8. Data set WP6.

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2.2.7 WP7: Dissemination and Communication

WP7 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
First batch of Communication materials	Set of logos, templates, website, social network accounts, PowerPoint general presentation	Proposal, Grant agreement,	No	Images, reports	jpg., pdf, .docx, .pptx	500MB max	All partners	Internal/ External	Yes
Initial Dissemination & Communication Plan	Dissemination strategy and plans concretely the dissemination activities.	Proposal, Grant agreement,	No	Report	.docx, .pdf	50MB max	All partners	Internal/ External	Yes
Second batch of communication materials	Factsheets, posters, roll-up, 1st video	Proposal, Grant agreement,	Graphical signature from First batch	Images, Videos	jpg., pdf, .docx, .pptx, .mp4.	10GB max	All partners	Internal/ External	Yes

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WP7 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Stakeholders database	Online database of stakeholders and technical/scientific networks of interest to be used by the consortium.	Contacts information from each partners' network	Grant Agreement	Excel	.xlsx	50MB max	Consortium of the ACROBA project	Internal	No
Updated Dissemination & Communication Plan	Dissemination strategy and plans concretely the dissemination activities.	Proposal, Grant agreement	Initial Dissemination & Communication Plan	Report	.docx, .pdf	50MB max	All partners	Internal/ External	Yes

Table 9. Data set WP7.

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2.2.9 WP8: Management

WP8 DATA (M18)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Communication and Dissemination Master Plan (CDMP) D8.2	Outlines for the communication and dissemination activities planned by the ACROBA partners for the whole project duration	Proposal, grant agreement	D7.2	Report	.pdf / .docx	1.2MB	All partners	Internal	No
Exploitation Strategy (v1, v2, final)	Exploitation strategy	Proposal, grant agreement, internal surveys		Report	.docx	NaN	All partners	Internal	No

Table 10. Data set WP7.

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2.2.11 WP9: Management

WP9 DATA (M9)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Project Handbook	Guidelines for correct managing of the project	Grant Agreement (GA), Consortium Agreement (CA)	No	Report	.docx	1 MB	All partners	Internal	No
Data management and security plan	Guidelines for managing research data	GA, CA, European Commission	No	Report	.docx	500 kB	All partners	Internal	No
Risk breakdown structure (RBS)	Risk breakdown structure.	Partners	No	Report	.xml	850 kB	All partners	Internal	No

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WP9 DATA (M9)	Description	Origin	Re-use of existing data	Type	Format	Expected size	Receiver	Internal/ External	Public Yes/No
Quality assurance plan	Guidelines for quality of ACROBA	GA, CA, Partners	From D9.1 Project Handbook	Report	.docx	2 MB	All partners	Internal	No
Data management plan (M6)	Summary of data generated from M1-M6	Partners	From D9.2 Data management and security plan	Report	.docx	500 kB	All partners	Internal	Yes
Ethics requirements (WP10)	Ethical requirements for the operation of ACROBA project	European Commission	No	Report	.docx	500 kB	All partners	Internal	No

Table 11. Data set WP9

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3 ACROBA ETHICS AND LEGAL ASPECTS

All data collected during the ACROBA lifetime will be treated according to the WP10 “Ethics requirements” following the procedures detailed in the Deliverable 10.1. The external ethics advisor will be Mr. Hans Graux, from the Belgian company TIMELEX.

4 ACROBA COMPLIANCE WITH GDPR

4.1 Global data Protection Policy

The policies and guidelines described in the previous Data Management report (D9.2, M3) continued being active and has been complied by every partner of the project.

The Data Protection Officer (DPO) designated for ACROBA project is Mrs. Silivia Schmid, from BFH. She will be responsible of giving support and assistance to partners in data management issues. For instance, for choosing the right publication path.

Each partner has designated a person to be Data Protection contact person that will be the contact point for ACROBA DPO in case any issue regarding data protection arises along the life of the project.

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ACROBA partner	Person
BFH	Silivia Schmid (female) – Acroba DPO
BIBA´s	Sylvie Gavirey (female)
MRNEC	Alfons Salden (male)
AITIIP	Joaquín Sanz (male)
DEUSTO	Mikel Garcia Llorente
EMC2	Etienne Gaultier (male)
CABKA	Christian Krösch (male)
IKOR´s	Daniel Aguinaga (male)
SIGMA	Maxime Padrin (male)
IMR	Melanie Horkan (female)
NUTAI	Jorge Faus (male)
STER	Alejandro Muñoz (male)
STAM	Stefano Ellero (male)
ICPE	Paul Minciunescu (male)
VICOM	Nora Gurrutxaga (female)
MOSES	Sergio Gracia (male)
ROBOCOAST	Juha-Pekka Alanen (male)

Table 12. ACROBA data protection contacts.

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ACROBA partners acting as data providers must respect the policies set out for the data management in the Data Management Plan.

5 CONCLUSION

The methodology that was defined in the D9.2. Data Management in M3 has proved good enough to satisfy the objectives of the project in the management of all the data that is being generated. As a result of that, it will be followed during the next months.

This document has been aligned with the Horizon 2020 open data requirements and the FAIR guidelines. As has been mentioned before, the content of the DMP will be updated in M36 and the final version will be submitted on M42.

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