H2020 - ICT-13-2018-2019

# MUSKEJCEER



Machine Learning to Augment Shared Knowledge in Federated Privacy-Preserving Scenarios (MUSKETEER) Grant No 824988

D8.5 Community engagement and technology transfer activities

November 21



# Imprint

Contractual Date of Delivery	y to the EC:	31 Octo	ber 2021			
Author(s):	Antoine Garnier Franke (IDSA)	(IDSA);	Antonia	Kuster	(IDSA)	Domenic
Participant(s):	-					
Reviewer(s):	Manuel A. Vázque	z López (U	C3M); Su	sanna Bo	onura (E	NG)
Project:	Machine Learning Federated Privacy	to Augmei -Preserving	nt Shared g Scenario	l Knowle os (MUS	edge in KETEER)	)
Work package:	WP8					
Dissemination level:	Public					
Version:	1.0					
Contact:	Antoine antoine.garnier@i	nternation	Garnie naldatasp	r aces.org	ſ	-
Website:	www.MUSKETEER	.eu				

# Legal disclaimer

The project Machine Learning to Augment Shared Knowledge in Federated Privacy-Preserving Scenarios (MUSKETEER) has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 824988. The sole responsibility for the content of this publication lies with the authors.

# Copyright

© MUSKETEER Consortium. Copies of this publication – also of extracts thereof – may only be made with reference to the publisher.

Machine Learning to Augment Shared Knowledge in Federated Privacy-Preserving Scenarios (MUSKFTFFR)



# **Executive Summary**

This document describes the communication and engagement activities but also the technology transfer activities attached to the MUSKETEER project. It provides an overview of the actions that have been undertaken during the second half of the project. It includes a review of the Key Performance Indicators, channel per channel, as described in the Description of Actions. It eventually includes an outlook on future internal organization for communication beyond the end of the project.

# **Document History**

Version	Date	Status	Author	Comment
1	31 October 2021	For internal review	Antoine Garnier & Antonia Kuster (IDSA)	First draft
2	16 November 2021	First review	Manuel A. Vázquez López	Review
3	23 November 2021	Second review	Susanna Bonura (ENG)	Second review
4	25 November 2021	Final version	Antoine Garnier & Domenic Franke (IDSA)	Version 1.0
5	26 November 2021	Final review	Mark Purcell & Gal Weiss (IBM)	Version 1.0



# **Table of Contents**

LIST	OF FIGURES	5
LIST	OF TABLES	5
LIST	OF ACRONYMS AND ABBREVIATIONS	6
1	INTRODUCTION	7
1.1	Purpose	7
1.2	Related Documents	7
1.3	Document Structure	9
2	UPDATE ON DISSEMINATION AND COMMUNICATION ACTIVITIES	10
2.1	Highlights about community engagement and technology transfer	
2.1.1	Community engagement	
2.1.2	Technologies transfer	
2.2	Channels	
2.2.1	Partner's Networks	
2.2.2	Events	
2.2.3	Social media	
2.2.4	Media	
2.2.5	Scientific publications	
2.2.6	Communication material	
2.3	Hackathon	
2.3.1	Overall objective	
2.3.2	Partnerships	
2.3.3	Communication activities	
2.3.4	Evolution following the Covid-19 crisis	
3	DISSEMINATION AND COMMUNICATION: INTERNAL ORGANIZATION	
3.1	Tracking process	
3.2	Beyond the project	

Machine Learning to Augment Shared Knowledge inFederatedPrivacy-PreservingScenarios

MUSKETTEER

3.2.1 3.2.2	Activities on the short-term
4	CONCLUSION
5	REFERENCES
6	ANNEXES
6.1	Annex 1



# **List of Figures**

Figure 1 Relationship of D8.5 and the rest of WP8 documents
Figure 2 The Elements of Big Data Value presenting the MUSKETEER project
Figure 3 Technologies and Applications for Big Data Value featuring a dedicated chapter to present the MUSKETEER project
Figure 4 MUSKETEER blog post about Federated Learning impact in the health sector 14
Figure 5 Medium blog stats (viewed online 30.10.2021)15
Figure 6 Individual stats for a post on MUSKETEER Medium blog (viewed online 30.10.2021)
Figure 7 Technical talks pre-requisite trainings included in our 2nd hackathon agenda 18
Figure 8 Presentation of the MUSKETEER public repositories
Figure 9 Visual to present new releases from the project
Figure 10 Runner Up Award for the Smart Manufacturing use case story of MUSKETEER 21
Figure 11 Comau presenting MUSKETEER outcomes during the IDSA Summit 202123
Figure 12 Two examples of the blog post postings on LinkedIn
Figure 13 Two examples of the 2nd Hackathon campaign on LinkedIn and Twitter25
Figure 14 Two different examples of project related content in the LinkedIn group
Figure 15 Hackathon visuals used in different context27
Figure 16 Participant feedback about the 2nd MUSKETEER hackathon
Figure 17 Examples of messages from the Communication package prepared for the hackathon

# **List of Tables**

Table 1 Achievements in regard to the DoA KPIs	33
--	----



# List of Acronyms and Abbreviations

Abbreviation	Definition
AI	Artificial Intelligence
BDVA	Big Data Value Association
DARIO	Data, AI and Robotics
BDV PPP	Big Data Value Public-Private Partnership
CA	Consortium Agreement
COVID-19	Coronavirus Disease 2019
CSA	Coordination and Support Action
DoA	Description of Actions
EBDV	European Big Data Value (Forum)
EEN	European Enterprise Network
EFFRA	European Factories of the Future Research
	Association
ERRIN	European Regions R&I Network
EU	European Union
EUM	End-User Management (Committee)
FL	Federated Learning
GA	Grant Agreement
JRC	Journal Citation Reports
IAIPRI	Impact Assessment Intellectual Property Rights and Innovation (Committee)
IDSA	International Data Spaces Association
KPI	Key Performance Indicator
MMLL	MUSKETEER Machine Learning Libraries
POM	Privacy Operations Mode
cPPP	Contractual Public-Private Partnership
PPT	Privacy Preserving Technology
RIA	Research and Innovative Action
SAP	Systeme, Anwendungen und Produkte
SME	Small & Medium Enterprise

D8.5 Community engagement and technology transfer activities



# 1 Introduction

## 1.1 Purpose

The deliverable D8.5 "Community engagement and technology transfer activities" aims to describe the dissemination and communication actions that have been undertaken through the project last period and report about their status. It includes a specific focus on community engagement and technologies transfer. As described in T8.2 "Communication activities and engagement with Industrial Data Platforms", which D8.5 results from, the activity focuses on liaising with existing initiatives, "additional stakeholders and relevant EU projects [...] in order to promote the project and benefit from the other relevant projects' experiences and outcomes". D8.5 reports about MUSKETEER activities in that field presenting "a record of activities related to community creation and engagement, and technology transfer developed in the course of the project". It eventually reports about Dissemination KPIs<sup>1</sup> completion and provides an outlook on future internal organization for communication beyond the end of the project.

## 1.2 Related Documents

The deliverable D8.5 "Community engagement and technology transfer activities" is an important result of the WP8. The document is included in a set of reports related to the work package activities as described in Figure 1. It also has strong ties with different committees set up in the project whose discussions are described in a later paragraph.

<sup>&</sup>lt;sup>1</sup> From the Description of Actions

MUSKET

Federated Privacy-Preserving

Scenarios

(MUSKETEER)



Figure 1 Relationship of D8.5 and the rest of WP8 documents

As stated in the D8.2 "Dissemination and communication plan", the deliverable D8.5 *receives inputs* to plan stakeholders' engagement. D8.5 complements the strategy arranged in the early stage of the project, especially regarding stakeholders' management. It eventually *provides inputs* to the deliverable D8.6 "Evaluation and impact assessment" and D8.7 "Business and exploitation plan".

As mentioned, dissemination and communication actions but also stakeholders' management are strongly related to the activities of different committees established in the project. D8.3 "Project communication and engagement activities" presents a final report of these activities:

**The Impact Assessment Intellectual Property Rights and Innovation Committee** (IAIPRI Committee) aims to take care of external requests made to the consortium and concerning its activities. The MUSKETEER project has received different requests that have been discussed during each committee organized as part of our General Assemblies. Dissemination opportunities but also information requests from various organizations have been discussed. Most of them have been accepted and dealt at consortium level while some other have been directed at specific partners when relevant.

From this point of view, the project has been deeply affected by the pandemic. Beside events that have been cancelled or postponed, many others, mostly switched online, offered limited opportunities to interact and receive feedback properly. Despite the mitigation strategy described in D8.3 "Project communication and engagement activities", our effort to engage with external stakeholders has received only a limited echo (see section 2.1.2 for more details).



Stakeholders' engagement is also strongly linked to the exploitation strategy of the project. As presented in D8.7, the consortium focused on individual strategies, partner by partner with a strong focus on open-source outcomes. This led to a lower involvement of this committee whose role was to coordinate decisions at consortium level.

**The End User Management Committee** (EUM Committee) aims to coordinate end users and prepare the pilot scenarios before and during the validation phase. It helped to promote the project and support the cooperation with major EU initiatives such as the European Factories of the Future Research Association (EFFRA) and the Big Data Value Association (BDVA) especially. It triggered important feedbacks and support presented below in sections 2.2.1 and 2.2.2 mainly.

## **1.3 Document Structure**

The document is divided in two main chapters. After the introduction, chapter 2 provides an update on the dissemination and communication strategy and the status of the different activities channel per channel but also a special focus on community engagement and technology transfer. The third chapter provides concrete figures about partner's dissemination activities (based on the tracking of each partner's activities) and KPIs review as well as a short overview on our internal organization during the last period and beyond the end of the project.



# 2 Update on dissemination and communication activities

## 2.1 Highlights about community engagement and technology transfer

## 2.1.1 Community engagement

Beside our second hackathon presented in detail in section 2.4, also part of engagement activities, two main actions performed during the project are highlighted below. First, we'll present the participation of MUSKETEER in 3 different publications driven by the BDVA and published by Springer Editor. Secondly, we'll have a look at our blog activity on Medium<sup>2</sup> to extend the reach of our social media channels and disseminate the outcomes of the project more broadly.

## 2.1.1.1 BDVA book chapters

The MUSKETEER consortium participated in three different publications from the BDVA. BDVA is an industry-driven international not-for-profit organisation focusing on enabling the digital transformation of the economy and society through Data and Artificial Intelligence. BDVA has been the private side of the H2020 partnership Big Data Value Contractual Public-Private Partnership (BDV cPPP). As part of the BDV cPPP, the project was offered to contribute to the publishing program of the BDVA. It contributes to *"the results of a collective effort undertaken by the European data community as part of the BDV PPP between the European Commission and the BDVA to boost data-driven digital transfer (Curry, 2021). It was the opportunity to engage and synchronize with the research activities under the umbrella of the BDVA. MUSKETEER is represented in three of these publications that contributed to extend the dissemination of the project: "The Elements of Big Data Value", "Technologies and Applications for Big Data Value" and "Data Spaces: Design, Deployments, and Future Directions".* 

"The Elements of Big Data Value" (Curry, 2021) is available on Springer's website<sup>3</sup> in Open Access and it's been downloaded 33k times in digital format. It "presents the foundations of the Big Data research and innovation ecosystem and the associated enablers that facilitate delivering value from data for business and society. It provides insights into the key elements for research and innovation, technical architectures, business models, skills, and best practices to support the creation of data-driven solutions and organizations". The book

<sup>&</sup>lt;sup>2</sup> https://h2020musketeer.medium.com/

<sup>&</sup>lt;sup>3</sup> https://link.springer.com/book/10.1007/978-3-030-68176-0



benefits from a dedicated website<sup>4</sup> where the publication is presented in detail as shown in Figure 2.



Figure 2 The Elements of Big Data Value presenting the MUSKETEER project

MUSKETEER is cited several times along the publication, but especially in chapter 10 where the project is presented in detail. The Best Success Story document built in 2020 (see section 2.2.1 for more details) is attached to the book directly. The high number of downloads of the book represents an important success for the dissemination of MUSKETEER, engaging the central community for the project of the BDVA.

"Technologies and Applications for Big Data Value" is the second book driven by the BDVA and published by Springer (Curry, 2022). Planned to be published by the end of the year or early next year, the book "*explores cutting-edge solutions and best practices for big data and data-driven AI applications for the data-driven economy. It provides the reader with a basis for understanding how technical issues can be overcome to offer real-world solutions to major industrial areas*".

<sup>&</sup>lt;sup>4</sup> http://elements-of-big-data-value.eu/





Figure 3 Technologies and Applications for Big Data Value featuring a dedicated chapter to present the MUSKETEER project

An entire chapter is dedicated to MUSKETEER<sup>5</sup>. The title of our chapter is "*Privacy Preserving Technologies for Trusted Data Spaces*". It provides an overview of the project, from a theoretical basis to the applied use case with the smart manufacturing example. It goes from explaining the main concepts used by the project such as Federated Learning, Privacy Preserving Technologies (PPTs) or Privacy Operation Modes (POMs) to the demonstration of the advantages of Federated Learning and its application in an automotive use case. It is again a very good example of collaboration within the BDV PPP and its related projects. It will certainly contribute to the dissemination of the project even beyond its official end.

Lately, the MUSKETEER project received the acceptance from another book driven by the BDVA and to be published by Springer. Initially called "*Data Platforms: Foundations, Design Space, and Deployments*"<sup>6</sup>, the book title has been changed to "*Data Spaces: Design, Deployments, and Future Directions*". Again here, MUSKETEER is discussed in a dedicated chapter. It presents more technical and advanced results adopting three different

<sup>&</sup>lt;sup>5</sup> The final version of the chapter can be found on Box: <u>https://ibm.box.com/s/v9jzvizj1mhxjl6b72d3s</u> Og5vmk47t5a

<sup>&</sup>lt;sup>6</sup> The last version of the chapter can be found on Box: <u>https://ibm.box.com/s/yidnp4iivbl29m881n2</u> tvim0u7wb0s9c



perspectives on the platform, the final architecture view, a legal perspective, and the monetization perspective of such a data platform. All elements within it are still valid with the new orientation of the book since the MUSKETEER architecture is based on a distributed approach very much in line with the data space paradigm<sup>7</sup>. It is again a good example of the collaboration within the BDV PPP using projects and their outcomes to illustrate and transfer knowledge on such a broad topic. This book has no publication date set yet.

## 2.1.1.2 Scientific dissemination and communication with the blog

Initially thought of as a way to publish longer pieces than on Twitter <sup>8</sup>or our LinkedIn group<sup>9</sup>, the MUSKETEER blog on Medium eventually gave us the possibility to engage a new audience and increase our reach. Started in 2020, the blog enabled us to share results on a regular basis. The activity increased in the last months of the project as more outcomes were available. The posts published illustrate the different aspects of the platform, from technical aspects (e.g., a dedicated post discussed the different POMs built along the project, how they serve the overall privacy of the platform but also their efficiency with regards to different parameters) to applied aspects (e.g. how federated learning is serving the heath sector enabling organizations to share data while strictly preserving its privacy as presented in Figure 4).

<sup>&</sup>lt;sup>7</sup> For a definition of data space, see for instance, Design Principles of Data Spaces, 2021, p. 23: https://designprinciples-for-data-spaces.org/

<sup>&</sup>lt;sup>8</sup> <u>https://twitter.com/ids\_association?ref\_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor</u>

<sup>&</sup>lt;sup>9</sup> https://de.linkedin.com/company/international-data-spaces-association

Machine Learning to Augment Shared Knowledge in

Federated

**Privacy-Preserving** 

Scenarios



(MUSKETEER)



Figure 4 MUSKETEER blog post about Federated Learning impact in the health sector

The blog gave us the possibility to engage with a new audience not only because of the new platform (Medium) but also because of the additional publications our blog was accepted in. Medium is an online publishing platform hosting hybrid collection of amateur and professional blogs<sup>10</sup>. It is particularly popular in the field of technology, entrepreneurship, and innovation. It sounded very natural to extend our dissemination activities here where other related technology providers or business were already present (e.g., Owkin<sup>11</sup>, a start-up using FL in the heath sector, Ocean Protocol<sup>12</sup>, technology provider for data exchange). It also enables authors to share their piece on existing publications and increase their audience. We've been fortunate enough to see some of our posts re-published on large publications such as "Start it up", a community focused on self-learning, creation, and entrepreneurship, and followed by +723,175 people (Medium's largest active publication) and "Al in Plain English", a community dedicated to Al with 1,5M views per month.

<sup>&</sup>lt;sup>10</sup> https://en.wikipedia.org/wiki/Medium\_(website)

<sup>&</sup>lt;sup>11</sup> https://medium.com/owkin

<sup>12</sup> https://blog.oceanprotocol.com/



Currently the statistics presented in Figure 5 show that our blog posts brought 1121 viewers and 526 readers overall<sup>13</sup> with a reading ratio around 50%.

Stories Responses Series				
Date ↓	Views	Reads	Read ratio	Fans
Tackling the privacy issue: the solution of fe         6 min read · View story · Details	206	120	58%	2
Setting Your Own Federated Learning Test C 5 min read • In The Startup • View story • Details	326	174	53%	3
How Robots Learn From Each Other 5 min read • In Artificial Intelligence in Plain English • View story • Details	281	138	49%	1
Combining Federated Learning with Privacy 10 min read · In Artificial Intelligence in Plain English · View story · Details	146	69	47%	1

#### Figure 5 Medium blog stats (viewed online 30.10.2021)

Besides, with blog posts individual stats, the Medium blog proved to be an additional and important source of dissemination and engagement for the project. As presented in the Figure 6, our posts received an additional 20% of audience on average with the use of Medium (internal views).

<sup>&</sup>lt;sup>13</sup> According to the Medium typology

MUSKET

Federated Privacy-Preserving

Scenarios

(MUSKETEER)



Figure 6 Individual stats for a post on MUSKETEER Medium blog (viewed online 30.10.2021)

## 2.1.2 Technologies transfer

## 2.1.2.1 Internal and external technologies transfer

Despite a strong interest of the project partners for FML and the technological approach driven by MUSKETEER, its transfer outside of the consortium has been moderate.

End-user partners from the smart manufacturing use case and the health domain use case showed a real appetite for the technology produced during the project. As mentioned in D8.6 "Evaluation and Impact Assessment" B3D wants to continue the work started on its diagnosis assistant for prostate cancer and possibly extend it to other cancers. "We will be able to continue to work in the prostate cancer specific domain and try to create new models and continuing what we have already. At the same time, we could start looking at other diseases, for instance, liver cancer and other cancers for which we can apply similar approaches by using medical imaging to identify and eventually also classify the lesions existing in other organs of the human body<sup>14</sup>". On its side COMAU is planning to reuse MUSKETEER outcomes internally in their products as federated learning is expected to offer

<sup>&</sup>lt;sup>14</sup> See section 4.2, D8.6 "Evaluation and Impact Assessment"



a tremendous advantage to the company. "If Federated Learning is already effective on 2 robots, just imagine how it could be, adding multiple robots from multiple production lines from multiple factories"<sup>15</sup>. MUSKETEER technology has been instrumental for these companies to engage deeper with federated learning especially. In the case of health, it might even lead to the actual transfer of technology internally. It is worth mentioning that this is also the case for IBM, where parts of the components developed along the project will be migrated to the company's solutions. "A refactored version of some of them is ongoing work and we plan to add that to IBM Federated Learning<sup>16</sup>". More information about plans from these companies to use the technology internally can be found in D8.7 "Business and exploitation plan".

Such a transfer has been less successful externally. Collecting feedbacks from the partners (based on D8.6 and D8.7), we have not seen any request, from Small & Medium Enterprises (SMEs) in particular, interested to get involved with the platform directly. Nevertheless, some dissemination activities in that direction were organized (trainings, open GitHub repositories) and some contacts were made especially during the hackathon with external participants. This is detailed in the next section.

## 2.1.2.2 Technologies transfer strategy

Several events were organized along the project to present MUSKETEER components and let externals learn about them. Our two hackathons included presentations<sup>17</sup> of the platform and its different components. These presentations were necessary pre-requisites to participate to the hacking phases of the events.

<sup>&</sup>lt;sup>15</sup> See section 4.1, D8.6 "Evaluation and Impact Assessment"

<sup>&</sup>lt;sup>16</sup> See section 3.1, D8.6 "Evaluation and Impact Assessment"

<sup>&</sup>lt;sup>17</sup> Presentations are available on the internal MUSKETEER repository on Box: https://app.box.com/folder/146724628428?s=b9faaixpdrg4njk50o1chykz67v3z72s

(MUSKETEER)



September 28 (9)	September 29 (5)
10:00AM-10:10AM	Welcome and Introduction
10:10AM-10:30AM	Technical Talk: Introduction to federated learning in MUSKETEER
10:30AM-10:50AM	Technical Talk: Introduction to MUSKETEER attacks and defences
10:50AM-11:00AM Sessions	Hackathon rules, guidelines, general instructions   + Q&A
11:00AM-11:15AM 🛎 Sessions	Coffee Break
11:15AM-1:00PM 🎳 Sessions	[Breakout Room I] Hacking Phase 1
1:00PM-2:00PM Sessions	Lunch Break
2:00PM-3:45PM 🛎 Sessions	[Breakout Room I] Hacking Phase 2
3:45PM-4:00PM Sessions	Summary

Figure 7 Technical talks pre-requisite trainings included in our 2nd hackathon agenda

They proved to have been useful as no major problems were encountered during the hackathons regarding the on-boarding of the participants. Each hackathon included two



training sessions. We also organized a webinar in October 2020 (M20) together with NGIoT CSA<sup>18</sup> where we presented the content of our public GitHub repositories for the first time.

Mark Purcell		Gal Weiss     Gala Weiss     Gala     GPurcellMk explained how     @H2020Musketeer platform     working, over the     @ids_association live session     and talked about the open
Finally	MUSKETTEER	source assets @ibm_in_ireland Research released. 11:33 AM - Oct 1, 2020 - Twitter Web App 1 Quote Tweet 1 Like
<ul> <li>Messaging sub-system (pycloudmessenger): https://github.com/IBM/pycloudmessenger</li> <li>IBM / pycloudmessenger</li> </ul>	⊙ Unwatch 9 ∦r Unstar 5 ¥ Fork 14	C tì O tì sessitus Tweet your reply Raphy
Micro federated learning platform:     https://github.com/IBM/Adusketeer-Client     IBM / Musketeer-Client	⊙ Unwatch 6 📌 Unstar 6 💱 Fork 8	
<ul> <li>MUSKETEER website: <u>http://musketeer.eu/</u></li> <li>Twitter: @H2020Musketeer</li> <li>LinkedIn: H2020_MUSKETEER</li> </ul>		

Figure 8 Presentation of the MUSKETEER public repositories

IBM had the opportunity to present the different repositories and their content. These outcomes are publicly available<sup>1920</sup>.

Beside these presentations and trainings, GitHub repositories are disseminated on social networks towards our different communities. The idea is to present available software coming from the project and encourage external reuse.

<sup>&</sup>lt;sup>18</sup> https://www.ngiot.eu/event/views-on-ids-privacy-preserving-technologies-for-trusted-dataspaces/?instance\_id=92

<sup>&</sup>lt;sup>19</sup> https://github.com/IBM/pycloudmessenger

<sup>&</sup>lt;sup>20</sup> https://github.com/IBM/Musketeer-Client



(MUSKETEER)



Figure 9 Visual to present new releases from the project

It is also important to note that the technology transfer activity was hindered by the pandemic. The brutal switch to mostly online dissemination did not facilitate our effort to spread and encourage the use and reuse of MUSKETEER outcomes. This added complexity internally in the consortium as raised by the partners<sup>21</sup> and largely prevents us from properly disseminating and engaging with externals entities for technology transfer.

## 2.2 Channels

## 2.2.1 Partner's Networks

Partner's Network refers to the organizations in which partners are directly represented (mostly on national and European levels).

**Through European Public-Private Partnerships (PPPs)**, as mentioned in D8.3, MUSKETEER has been particularly active in the BDVA Big Data Value PPP, participating in different events organized by the network. On the second period of the project, MUSKETEER has been especially featured in eBDVForum 2020<sup>22</sup> and during the DataWeek 2021<sup>23</sup>. During the eBDVForum 2020, MUSKETEER (and COMAU) had the chance to present its smart

<sup>&</sup>lt;sup>21</sup> See sections 3.1, 4.1 and 4.2 in D8.6 "Evaluation and Impact Assessment"

<sup>&</sup>lt;sup>22</sup> https://2020.european-big-data-value-forum.eu/

<sup>&</sup>lt;sup>23</sup> https://www.big-data-value.eu/data-week-2021/



manufacturing use case<sup>24</sup> as a result of its participation to the Best Success Story Contest where the project won a Runner Up award as shown in figure 10.



Figure 10 Runner Up Award for the Smart Manufacturing use case story of MUSKETEER

Engineering (ENG) was also in charge of the Manufacturing stream of the event<sup>25</sup>. Davide Dalle Carbonare was the co-chair of this activity during the Forum. In 2021, the project

<sup>&</sup>lt;sup>24</sup> https://musketeer.eu/wp-content/uploads/2020/04/Best-Success-Story-Contest-Data-Economy-meets-Industry-4.0-to-create-the-next-generation-of-Smart-Manufacturing-thanks-to-Federated-Learning.pdf



participated in the DataWeek. It was presented on several occasions. Comau, Tree Technology and IBM presented the project in three different sessions, bringing a technical (architecture and security) and use case perspective<sup>26</sup>.

## 2.2.2 Events

The MUSKETEER project has been presented in a handful of events along the second part of the project using the partners' activities. In this section, we will proceed with a brief recap of various categories of events we joined to ensure we reached the objectives set in the Description of Actions (O3. Enhancement of the Data Economy)<sup>27</sup>. For the complete list of events the consortium attended in this first period of the project, please see Annex 1. It also relates to Dissemination KPIs list presented in section 3.1.

**10+ industrial diffusion events** with respect to partner's agenda, MUSKETEER was presented in various context following the different fields partners were involved in (security, big data, artificial intelligence, manufacturing, health). This KPI was already on a good track as mentioned in the previous deliverable D8.3. This trend continued over the last 18 months of the project. Despite the reduction of events due to the COVID crisis, partners managed to keep some dissemination activity and to participate in (maintained) events. For example, we would like to highlight the online participation of Biotronics3D at the European Congress of Radiology (ECR) 2020 (online) and 2021, the major event of radiology in Europe and 2nd worldwide, to present its products and research projects (such as MUSKETEER) to radiologists from all over the world. A second example is the IDSA Summit (online), where partners have been able to show some project results as presented in Figure 11.

<sup>&</sup>lt;sup>25</sup> https://2020.european-big-data-value-forum.eu/manufacturing/

<sup>&</sup>lt;sup>26</sup> https://www.big-data-value.eu/dw21-agenda/

<sup>&</sup>lt;sup>27</sup> See section 1.1.4 of the MUSKETEER Description of Actions





Figure 11 Comau presenting MUSKETEER outcomes during the IDSA Summit 2021

**5 workshops** The MUSKETEER project already got the chance to be presented and discussed in workshops as mentioned in D8.3. In the last period, MUSKETEER was presented in various workshops such as the one organized by KU Leuven (KUL) called "Data protection impact assessment: the MUSKETEER's project as a use-case" where data protection law experts of the KUL's Center for IT and IP Law discussed the main legal findings of the project, or in a workshop called "Addressing legal, technical and ethical challenges in the data market context"<sup>28</sup> organized by Safe-DEED<sup>29</sup>, an EU funded project. MUSKETEER has also been presented during workshops within larger events such as the DataWeek<sup>30</sup>. This KPI is therefore considered achieved. It is worth mentioning that MUSKETEER has also been the subject of numerous internal workshops along the project to be presented to different departments or foreign colleagues in large groups like in Stellantis (ex-FCA) where it was presented at FCA IT worldwide.

**3 workgroup attendances** MUSKETEER has been presented and discussed in the BDVA 43rd Activity Group meeting (18th and 19th of March, 2021)<sup>31</sup> jointly with the BDV PPP Technical Committee (technical representatives of the BDV projects portfolio). The two-day event

<sup>31</sup> https://www.bdva.eu/node/1763

<sup>&</sup>lt;sup>28</sup> https://www.law.kuleuven.be/citip/en/news/item/safe-deed-closing-event-addressing-legal-technical-andethical-challenges-in-the-data-market-context

<sup>&</sup>lt;sup>29</sup> https://safe-deed.eu/

<sup>&</sup>lt;sup>30</sup> https://whova.com/embedded/session/dsdw\_202105/1609513/



gathered nearly 100 BDVA/DAIRO members, BDV PPP project representatives and other key stakeholders together to pitch, network and collaborate. It led to a short report presenting the main activities of the two days. MUSKETEER was presented and discussed on several occasions as mentioned in the document<sup>32</sup>. Along with the paper "Big Data challenges in Smart Manufacturing Industry (ed. 2019)"<sup>33</sup> coming from the "Smart Manufacturing Industry group" in BDVA, co-led by Engineering and the paper called "Data Protection in the era of Artificial Intelligence"<sup>34</sup> in October 2019 as a result of the subgroup on "Data Protection and Pseudonymisation Mechanisms" within BDVA, they form the 3 workgroup attendances that made this KPI complete.

## 2.2.3 Social media

Since July 2020, we have continued to focus on raising awareness for the project and building a community interested in the overall project scope. The LinkedIn group currently has 102 members (as of October). The Twitter account grew from April 2020 to October 2021 to 144 followers. Here we are witnessing continuous steady growth.

We are close to the targets about followers on social channels. We are confident that with the planned content, the metrics will be achieved towards the end of the project - certainly for the Twitter account. On LinkedIn, the choice of a closed LinkedIn group complicates reaching a high number of members. It is more common to follow a company or project page on LinkedIn than to be a member of a topic-oriented group.

As announced in D8.3, we have focused more on blog posts around Federated Learning and other technical activities from the project.



<sup>32</sup> https://www.bdva.eu/node/1763

<sup>33</sup> https://midih.eu/documents/papers/BDVA\_paper1.pdf

34

https://www.bdva.eu/sites/default/files/Data%20protection%20in%20the%20era%20of%20big%20data% 20for%20artificial%20intelligence\_BDVA\_FINAL.pdf



#### Figure 12 Two examples of the blog post postings on LinkedIn

In addition to the blog posts, events such as the hackathon were also announced. With a campaign lasting several weeks, the hackathon on September 28 and 29 was prominently promoted on both social networks.

Antonia Kuster	Top media Tweet earned 652 impressions
We allow a good hackathon. What couldn't be more fun than a bunch of engineer, data scienti, web developers or students coming together hacking till late into the night? Come and try to develop attacks capable of penetrating our defences in a federated learning environment. You! Thave the opportunity to attack our MUSECIERE platform and try to penetrate our defences and affect our federated learning training in 3 different scenarios. Since the pandemic weive had to become a bit more creative when it comes to bringing folks together for activities that were traditionally held as large indoor gatherings. Therefore the MUSECIERER Hackathon will take place 100% virtually. Go and get your free tocket now <u>a https://loid.in/d27-200</u>	Our 2nd hackathon is just around the corner! Let's attack <b>#FederatedLearning</b> scenarios with us and put the @H2020Musketeer platform through its paces. Register for free and join our hackathon - 100% online. hopin.com/events/muskete pic.twitter.com/c8Lyk51Q1d
Sensered a la 2, 201 2°f Hackathor: Attacking federated learning scenarios	September 28 & 29, 2021 2 <sup>rd</sup> Hackathon: Attacking federated learning scenarios Senari Partiopants will work on developing and inplementing poisoning attacks on ther own for ascenario with honese (tenns and malicious users. In front there will be a defence method performed by the
жалбал <b>—</b> ен О ::	consortium members. nosacitus

Figure 13 Two examples of the 2nd Hackathon campaign on LinkedIn and Twitter

As we could notice, the LinkedIn group - instead of a focus page - promotes the community idea and encourages members to place project-related content there and share it with the community.

Call Notice - 1     C	Antonia Kuster Digital Communications Manager bei International Data Spaces Association ( 7 Monate #FederatedLearning is one of the most important paradigms addressing privacy
Mark Purcell + 2. Protignal Investigator at IBM Research 8 Monate + 3	& data governance issues in <b>#MachineLearning</b> . In the attached paper Ambrish Rawat & his colleagues take first known steps towards federatec mehr anzeigen
The MUSKETEER project is recognised by the EU Commission for high market creation potential and maturity. Obersetzung anzeigen	New Publication: FAT: Federated Adversarial Training
HORIZ N 2020	And and an and a second
Privacy preserving machine learning platform capable of sharing knowledge from sensitive industrial data intorade.rev - Leardaver 2 Min.	
O 💽 10	🕲 Natalia Simon und 5 weitere Personen

Figure 14 Two different examples of project related content in the LinkedIn group

#### 2.2.4 Media

MUSKETEER was featured in different media during the project time. Several appearances resulted from press releases created by the project. MUSKETEER was mentioned in a



national newspaper in Spain where it was seen as a potential solution for the rising COVID crisis in 2020<sup>35</sup>. The project appeared in innovation-oriented publications such as Enterprise Ireland in 2021<sup>36</sup>. MUSKETEER was also featured in more specialized publications following press releases made by the project<sup>37</sup>. This is the case for the smart manufacturing use case<sup>38</sup> <sup>39 40 41</sup> and in internal news magazines<sup>42</sup>. The health domain use case is currently being disseminated using the same strategy based on a press release. Additionally, as mentioned in D8.3, we participated in the Best Success Story Contest organized by the BDV PPP. Musketeer project won a Runner Up award as presented in section 2.2.1 and had the chance to be presented live during the eBDVForum on November 5, 2020. The event was covered by specialists and the local press.

## 2.2.5 Scientific publications

**12 publications in conferences and JCR journals:** the completion of this KPI is described in detail in D8.4 "Scientific dissemination activities". As a Research and Innovation Action (RIA), MUSKETEER had a continuous scientific activity along the project. This KPI is still a work in progress. 8 publications have already been accepted, 3 more are under review, and a number of them collecting recent results are currently assembled. But we are confident that more will soon complete our work and contribute to its impact.

#### 2.2.6 Communication material

New communication material was created during the second half of the project. They were not as general as the material created in the first period. They addressed specific opportunities like events or specific topics within the project. This material was only

<sup>&</sup>lt;sup>35</sup> https://www.elmundo.es/papel/futuro/2020/07/26/5f19b6edfdddffa0b78b4601.html

<sup>&</sup>lt;sup>36</sup> https://globalambition.ie/horizon-2020-privacy-preserving-technologies/

<sup>&</sup>lt;sup>37</sup> https://www.pressebox.de/pressemitteilung/industrial-data-space-e-v/Federated-learning-to-serve-smartmanufacturing-process-improvement-while-retaining-control-of-confidential-data/boxid/1024160

<sup>&</sup>lt;sup>38</sup> https://www.automation-mag.com/news/34232-comau-validates-the-musketeer-federated-machinelearning-platform-with-preliminary-results

<sup>&</sup>lt;sup>39</sup> https://usa-automation.net/news/34232-comau-vali dates-the-musketeer-federated-machine-learningplatform-with-preliminary-results

<sup>&</sup>lt;sup>40</sup> https://industry-asia-pacific.com/news/34232-comau-validates-the-musketeer-federated-machine-learningplatform-with-preliminary-results

<sup>&</sup>lt;sup>41</sup> https://www.industryemea.com/news/34232-comau-validates-the-musketeer-federated-machine-learningplatform-with-preliminary-results

<sup>&</sup>lt;sup>42</sup> https://www.eng.it/en/case-studies/musketeer-machine-learning-per-accrescere-la-conoscenza-condivisa



published online. In general, the new context created by the pandemic led to us switching most of our communication to an online format.

We created new visuals for the 2<sup>nd</sup> hackathon as presented in Figure 12. Available in different formats, they were used for the event on the platform but also on social media.



Figure 15 Hackathon visuals used in different context



We also created visuals for specific topics such as GitHub releases. This way, we could re-use it each time a new release was presented and changed the text accordingly.

## 2.3 Hackathon

## 2.3.1 Overall objective

In order to stress test the privacy and security of the machine learning algorithms used in the platform, a second hackathon was set up. In the context of MUSKETEER, and other related IT oriented research and development projects, it is really important to organise this kind of event for two main reasons:

1. From the technical perspective, we create an environment in which external users make use of the technology developed in the project. In this sense, you can either gather important information about how the technology is working, how the components are integrated, how the execution processes are being performed or etc. You will get very critical information in a collaborative and external environment. It is true that there are some indicators that you can gather between the project members, but if you do not reach external users, you will not discover other aspects, such as the maturity of your project development in terms of making it available for external users

2. Regarding the communication and dissemination perspective, you are able to reach people very close to the domain you are targeting. In this specific case, we reached different professionals and students around the federated learning concept. This is very important as you may get some feedback from them in order to improve your developments.

We mainly addressed how good the integration is among our MUSKETEER components when external users are making use of them: Pycloudmessenger + MMLL + Attacks and Defences. We realised that the integration was good, and everything worked as expected. However, we needed to consider the time that an external developer uses in order to configure its computer to be ready for our federated learning training.

Other technical aspect addressed is the maturity level of our MMLL and defences implemented. In the time given to the participants in order to perform the attacks, both the defences and MMLL had a very good behaviour in front of the participants attacks.

Running a hackathon is one of the most effective ways to stay ahead, grow your innovation, and benefit from external exposure, especially with people experts in in federated learning area.

Hackathons are good opportunities to get people talking about the project. In this virtual hackathon we brought people together to work on our development and create innovative solutions under our MUSKETEER project branding.



MUSKEŤEEF	H2020_MU @H2020M	JSKETEER usketeer		
Cong job!	gratulatic @H2020	ons to the winr Musketeer ha	ner #TeamMa ckathon 🎉 🎾	drid! Great
1:25 PM	M · Sep 29, 20	021 · Twitter Web App		
ılı Vie	w Tweet activ	ity		
1 Retw	eet 3 Likes			
	9	<u>↑</u> ↓	$\heartsuit$	♪
MUSKETEEF	Tweet yo	our reply		Reply
	Juan Migue	el Auñon @jm_aunon	• Sep 30	
	Thx for the discussions interesting! Intelligence	opportunity! I am hap about how to break I would like to thank department for the c	opy to be member of your AI defenses hav s also to @infoGMV_ ontinuous support.	the winning team, the e been very es , namely, Artificial
	0	<u>1</u>	$\sim$ $2$	<b>^</b>

Figure 16 Participant feedback about the 2nd MUSKETEER hackathon

Finally, when running a hackathon, we are doing more than simply running an event. We are giving our project a very good opportunity to be popular and innovative. A hackathon provides an environment to explore what our community has to offer. We learn about industry developments while generating fresh ideas from the brightest talents.



## 2.3.2 Partnerships

For this second hackathon we tried to partner up with Reach Out H2020 project<sup>43</sup>. Reach Out project offers beta testing campaigns to test software from research projects. It puts projects in contact with beta testers and early users. A scenario defined with the support of the Reach Out team is defined and opened to the public for a period of time (from some weeks to some months). In this scenario projects earn completion reports and surveys while beta testers can be awarded money depending on the time they had to invest. Such a set up was very interesting for MUSKETEER as it could help us to get in contact with technical people (with the required background) and increase the attendance to the hackathon. We investigated with the Reach Out team how they could support us in such a way. Unfortunately, the offering is solely designed to test features on a limited time from 1 to 3 hours. We needed people involved on 2 full days. Nevertheless, Reach Out offered us to disseminate the project on their social networks.

Anticipating the difficulty to convince participants to attend a hackathon, we also thought about getting the support of a company specialized in hackathon organization. Agorize<sup>44</sup> is specialized in engaging targeted audience for events. They help organizations from the ideation phase until concrete results (based on milestones defined with the customer). In our case, we discussed how they could help us to recruit students especially with the required background. Apart from the difficulty to access this specific audience (already in great demand), the service offered is only available through their platform. In other words, the experience of the hackathon should happen on the Agorize platform. With our solution of Hopin already in place, we didn't manage to find an agreement.

#### 2.3.3 Communication activities

In order to promote the hackathon in the best possible way and in line with the target group, a versatile communication strategy was put in place.

Starting with the internal communication, communication packages were sent within the project consortium, which included drafts for social media postings and graphics. This decision was made to ensure consistent promotion of the event. Spreading the communication across the well-established channels of the partners as well was supposed to maximize the reach to the highest level.

<sup>&</sup>lt;sup>43</sup> https://www.reachout-project.eu/

<sup>44</sup> https://get.agorize.com/

Federated Privacy-Preserving

(MUSKETEER)



#### 2nd Hackathon | Communication Package

#### Twitter #1

Prepare your keyboards, it's time for hacking! E Provide the opportunity to attack our @H2020Musketeer platform and try to penetrate our defences and affect our #FederatedLearning training in 3 different scenarios. Register now! In <a href="https://hopin.com/events/musketeer-2nd-hackathon-attacking-federated-learning-scenarios">https://hopin.com/events/musketeer-2nd-hackathon-attacking-federated-learning-scenarios</a>

**Scenarios** 

#### Twitter #2

Are you ready to hack? 💻 🎒

Our second @H2020Musketeer Hackathon is in the starting blocks! Don't miss your chance and try to develop attacks capable of penetrating our defences in a #FederatedLearning environment!

https://tinyurl.com/3j67vpwx

#### LinkedIn #1

We all love a good hackathon. What couldn't be more fun than a bunch of engineers, data scientist, web developers or students coming together hacking till late into the night?

Come and try to develop attacks canable of penetrating our defences in a federated learning Figure 17 Examples of messages from the Communication package prepared for the hackathon

Furthermore, other possible distribution partners such as universities and research institutions were contacted on a personal level, briefed, and also provided with a communication package in order to reach the defined target group in the best possible way.

The listing of the event in many newsletters of the partners was also part of the communication strategy and offered us here the opportunity to reach a wide field of potential participants.

In a social media campaign lasting multiple weeks, several postings were made on both Twitter and Linkedin, which showed a positive, conspicuous engagement rate.

We ended up with almost 70 registrations on Hopin (69 registrations) and 25 attendees for the event – which was a good number considering our set up (especially regarding the number of mentors available).

#### 2.3.4 Evolution following the Covid-19 crisis

After the first hackathon had to be held online due to the Corona crisis and turned out as a great success, the second hackathon was also hosted online. As more and more events were forced to take place online due to the ongoing pandemic, the target audience was also



sensitized to participate in a fully online event. This was also reflected in the high number of registrations.

We chose Hopin as the event platform because it offered the possibility to operate simultaneously in parallel breakout rooms. In addition, the platform offered the opportunity to record the event in full length.



# 3 Dissemination and Communication: internal organization

## 3.1 Tracking process

As explained in the deliverable D8.2 Dissemination and communication plan, we established a reporting process for the dissemination activities of each partner. A complete view can be found in Annex 1 gathering a detailed view of the various actions. In order to keep track of this work and in regard to the KPIs, the table below presents our achievements:

Activity	Targeted communities	KPIs (at least)	Responsible	M36
Scientific	Scientific/research	12 publications in	All; led by	17 submitted,
publications	community,	JCR journals or	scientific	8 under
	industrial companies, SMEs	conference	partners.	review,
				3 rejections,
				6 accepted
Conference	Scientific/research	12 participations.	All; led by the	22
presentations	community,	12 publications	project	participations
	industrial companies, SMEs		coordination	w/
				publications
Workgroups	Industrial data providers and	3 workgroup	All; coordinated	3 workgroup
	consumers	attendances	by tech	attendances
			development	
			partners.	
OS	Open-source community,	10 open-source	All; coordinated	GitHub OS
community	software developers.	web communities'	by tech	releases,
engagement		interaction	development	Meetup
			partners.	(postpone)
Hackathon	Open-source community,	2 Hackathons on	All; coordinated	2 hackathons
	software developers, hackers	Adversarial	by tech	
		Attacks with at	development	
		least 100	partners.	
		researcher		
		participants		
Training	Technical and software	5 sessions	All; coordinated	During
sessions	community		by tech	hackathons
			development	(2 per event)
			partners.	+1 webinar
Leaflets,	General public, media	1 brochure	All; coordinated	Yes + rollup
brochure,	institutions, industrial	(created in the	by	and video
factsheet	companies, SMEs, scientific	first 6 months)	dissemination	
	and research community	1000 copies to be	leader	
		distributed.		
News	General public	3 news releases a	All; coordinated	<b>6</b> news
release		year per country.	by	releases
			dissemination	
			leader	
Social media	General public	1 Twitter account;	All; coordinated	152 f. on
		1 LinkedIn	by	Twitter and

#### Table 1 Achievements in regard to the DoA KPIs



Federated Privacy-Preserving Scenarios
(MUSKFTFFR)

		account; 1 post	dissemination	<b>110</b> f. on
		per week on	leader	LinkedIn
		average; +200		
		followers.		
Newsletters	General public	1 per year.	All; coordinated	Through
			by	partners'
			dissemination	activities and
			leader	Medium blog
Website	General public, industrial data	3000 unique	All; developed	Yes
	providers and data consumers,	visitors	by project	
			coordinator	

# **3.2** Beyond the project

As the project is finishing end of November 2021, we also discussed different actions to keep information available for the future and transfer assets when needed.

## 3.2.1 Activities on the short-term

**Final press release** We will work on a final press release to announce the end of the project and its main outcomes. This document will present the MUSKETEER project in general, including quotes from the partners and what made them satisfied with the project. It will also present available outcomes such as the open-source GitHub repositories. This press release will be presented on our website, but it will also be used for social media communication. We will ask the partners to reuse it externally for their own communication activity. Besides the partners, the press release will be shared with PPP holders such as BDVA, EFFRA and running CSAs such as NG-IoT and Open DEI.

**Social media** Different social media channels were set up in MUSKETEER with the Twitter account, the LinkedIn group and the Medium blog. Following a short discussion with the BDVA, holder of the Big Data Value PPP, whom MUSKETEER project is depending on, we decided to create specific messages to invite followers of our activities to follow relevant activities within the BDVA. They would be invited to stay informed about activities of taskforces 6 "Data Protection" and taskforce 11 "Trustworthy AI", particularly relevant for anyone interested in MUSKETEER activities. Additionally, we will invite followers to subscribe to the BDVA newsletter, which is another channel to stay informed about relevant activities.

Machine Learning to Augment Shared Knowledge in Federated Privacy-Preserving Scenarios (MUSKFTFFR)



## 3.2.2 Activities on the long-term

**Website** Some adjustments will be made on the website to reflect the end of the project, but also to easily find first information about the project. Visitors will be informed about the project's end and major outcomes from the beginning in the "About" section. In the "Publications" section, the brochure of the project and the success stories about use cases will be made more prominent to be immediately identified by the visitor. A sub-section about GitHub repositories presenting open-source software will also be added in the "Publications" section. In the "Contact" section, some direct contacts from partners will be added. Basically, a list of topics (MUSKETEER platform, client connector, adversarial attacks, monetization strategies, etc.) with email addresses from people involved in related tasks will be created and will replace the existing contact form.

**BDV PPP** Additionally, information about the project will be transferred to the BDV PPP in two ways. First, documentation of the project will be transferred to SAP Jam, the intranet used by the BDV PPP. That way the information will be stored on the long term and made available for extensive internal use at the BDV PPP. Secondly, we will create two blog posts to enrich the description of the project on the BDV PPP website<sup>45</sup>. One high level blog post describing the MUSKETEER platform, its aim, objectives and its reception by the use cases and another post to present the technical outcomes. These posts will include relevant links to available material on the Internet.

<sup>&</sup>lt;sup>45</sup> https://www.bdva.eu/?q=ppp-projects



# 4 Conclusion

The deliverable D8.5 "Community engagement and technology transfer activities" presented communication and dissemination activities in MUSKETEER for the last 18 months of the project. After a brief introduction in Chapter 1, it focused on community engagement and technologies transfer in the first section of the Chapter 2 before moving on to an update about dissemination and communication activities channel per channel in a second section two. Chapter 3 briefly recapped the status about dissemination and communication KPIs completion and presents arrangements taken by partners to ensure availability of information about MUSKETEER beyond the project time especially on the website and about GitHub repositories.

# 5 References

**Curry, E., Auer, S., Berre, A.J., Metzger, A., Perez, M.S., Zillner, S.,. 2022.** *Technologies and Applications for Big Data Value.* s.l. : Springer, 2022.

**Curry, E., Metzger, A., Zillner, S., Pazzaglia, J-C., Robles, A.,. 2021.** The Elements of Big Data Value Foundations of the Research and Innovation Ecosystem: Foundations of the Research and Innovation Ecosystem. s.l. : Springer, 2021. 978-3-030-68175-3.



# 6 Annexes

## 6.1 Annex 1

Here is the aggregated information related to the dissemination and communication activities of the consortium:

Caption:



	MUSKETTEER TYPE	TITLE	ORGANIZER / PUBLISHER	DATE	PROJECT MONTH	COUNTRY	Link	NOTES/MOTIVATION/COMMENTS	STATUS
B3D	04. Event: Workshops	Welcome to the future of Radiology	Biotronics3D	24/05/2019	6	UK	www.biotronics3d.com	n customers together and present new products and research projects that ma	Done
B3D	15. Liaisons with National Initiatives	icial Intelligence Centre for Value Base	King's College London	18/09/2019	10	UK	https://www.kcl.ac.uk/bmeis/research-impact/london	ging and Al and help make products that will substantially improve the experien	Done
B3D	06. Event: Conference	Big Data London	BigDataLnd - 3rd Street Group	13-14/11/2019	12	UK	https://bigdataldn.com/	e and exhibition, hosting leading data and analytics experts, with the tools to d	e Done
B3D	15. Liaisons with National Initiatives	icial Intelligence Centre for Value Base	King's College London	21/11/2019	12	UK	https://www.kcl.ac.uk/bmeis/research-impact/london	ging and Al and help make products that will substantially improve the experien	Done
B3D	06. Event: Conference	ECR 2020	European Society of Radiology	11-15/03/2020	16	Austria	https://www.myesr.org/congress/about-ecr	anged to online congress due to the pandemic. ECR is the major event of radiolog	kejected
B3D	06. Event: Conference	ECR 2020	European Society of Radiology	15-19/07/2020	20	Online	https://www.myesr.org/congress	diology in Europe and 2nd worldwide. B3D will present its products and research,	Done
B3D	13. Liaisons with Innovation Actions	20 ProCAncer-I project consortium mee	FORTH	29/10/2020	23	Online	https://www.procancer-i.eu/	elop an Al Platform integrating imaging data and models, supporting precision c	Done
B3D	06. Event: Conference	ECR 2021	European Society of Radiology	03-07/03/2021	28	Online	https://www.myesr.org/congress/about-ecr	in Europe and 2nd worldwide, to present its products and research, inluding MUS	5 Done
B3D	13. Liaisons with Innovation Actions	Al for Health Imaging (AI4HI) network	FORTH	23/03/2021	28	Online	https://www.procancer-i.eu/	5 European projects, ProCAncer-I, EUCanImage, INCISIVE, CHAIMELEON, and PRIM	Done
B3D	14. Liaisons with 3rd Parties	Technical meeting with medneo	Biotronics3D	20/08/2021	33	Online	https://www.medneo.co.uk/	Demonstration of current and future technologies for customers.	Done
B3D	13. Liaisons with Innovation Actions	20 ProCAncer-I project technical meet	Biotronics3D	22/09/2021	34	Online	https://www.procancer-i.eu/	a and models, supporting precision care through prostate cancer's continuum.	Done
B3D	14. Liaisons with 3rd Parties	Technical meeting with Affidea	Biotronics3D	23/09/2021	34	Online	https://www.affidea.com/	on of future technologies for customers and discussion of possible participation	Done
B3D	05 Event: Conference	FCR 2022	European Society of Radiology	02-06/03/2022		Austria	https://www.myesr.org/congress	in Europe and 2nd worldwide, to present its products and research, inluding M	Planned
COMAU	04. Event: Workshops	Internal workshop for requirements	COMAU	03/04/2019	4	Italy		Contacts collected among Comau collegues and suppliers (Automation	Done
COMAU	02. Online: Website	Comau web page	COMAU	31/05/2019	6	Italy	https://www.comau.com/en/this-is-comau/innovationdigitaltr	ansformation/research-and-innovation-projects	Done
COMAU	03. Online: Social Media	Sharing Musketeer video on Comau Facebook channel	COMAU	26/11/2019	11	Italy	https://www.facebook.com/COMAU/ https://www.youtube.com/watch?v=7vm5jqjob4k&feat ure=youtu.be		Done
COMAU	04. Event: Workshops	Mid term Musketeer project achievements	COMAU	01/05/2020	18	Italy			Done
COMAU	06. Event: Conference	Participation on drafting of the Best Success Story for BDV	IDSA	30/04/2020	17				Done
COMAU	07. Event: Presentation / Lecture	esentation of the project and its bene	COMAU	05/05/2020	18	Italy		Comau collegues in EMEA, LATAM, NAFTA	Done
COMAU	03. Online: Social Media	eteer video shared on Comau linkedin	COMAU	15/10/2020	23	Italy	com/posts/comau_musketeer-in-a-nutshell-activity-67	22521704591167488-jKk9	Done
COMAU	10. Publications: White papers	Comau press release	COMAU	19/11/2020	24	Italy	ia/news/2020/11/comau-validates-the-musketeer-fede	-the-musketeer-federated-machine-learning-platform-with-preliminary-results	; Done
COMAU	07. Event: Presentation / Lecture	European Big Data Value Forum	COMAU	05/11/2020	24	Europe			Done
COMAU	08. Event: Hackathon	Participation to Hackathon	IMP and all partners	24-25/11/2020	24	Europe	com/events/hackathon-shielding-federated-learning-a	against-attacks	Done
COMAU	04. Event: Workshops 04. Event: Workshops	spaces, standards and trustworthinee	COMAU, KU LEUVEN	25/05/2021	30	Europe	s://whova.com/embedded/session/dsdw_202105/1609	513/	Done
COMAU	07. Event: Presentation / Lecture	st in Projects. Projects as Catalysts for	IDSA	23/06/2021	31	Europe	https://internationaldataspaces.org/idsa-summit-2021	/	Done
COMAU	12. Publications: Article / Interview (press, other media)	Smart Manufacturing Interview	IDSA	18/10/2021	35	Europe			Done
ENG	06. Event: Conference	BDVA Activity Group	BDVA	26/02/2019	3	Belgium		Musketeer presented to all BDVA Activity Group participants	Done
ENG	06. Event: Conference	BDV Steering Committee	BDVe	27/02/2019	3	Belgium		Attendance of the BDV PPP Steering Committee meeting	Done
ENG	06. Event: Conference	BDV meet up	ALL	26-28/06/2019	7	Latvia	http://www.bdva.eu/node/1217	BDV workshops with other projects under the PPP	Done
ENG	06. Event: Conference	Workshop on Artificial Intelligence for Manufacturing	EFFRA, BDVA, euRobotics	02/07/2019	8	Belgium	eu/digital-single-market/en/news/workshop-artificial-intellige	Musketeer presented as project in Al for Manufacturing	Ооле
ENG	06. Event: Conference	Common European data spaces for Smart Manufacturing	EC	16/09/2019	10	Belgium	digital-single-market/en/news/common-european-data-spaces	lusketeer promoted as project implementing a data/knowledge sharing platfor	Done
ENG	06. Event: Conference	ICT proposers' day	ALL	19-20/9/19	10	Finalnd	https://ec.europa.eu/digital-single-market/en/news/digital- excellence-forum-ict-proposers-day-2019	Project dissemination in wide European forum	Done
ENG	06. Event: Conference	European BDV forum	ALL	14-16/10/2019	11	Finalnd	http://www.big-data-value.eu/ebdvf-2019/	Project dissemination in wide European forum, also required as we're par of the PPP	Done
ENG	06. Event: Conference	Project results contributing to data spaces for Smart Manufacturing	EC	22/10/2019	11	Belgium		Invitation to the interactive workshop to present the project view and how project results could contribute to setting up common European data spaces	Done

PARTNE	MUSKETTEER TYPE	TITLE	ORGANIZER / PUBLISHER	DATE	PROJECT MONTH	COUNTRY	Link	NOTES/MOTIVATION/COMMENTS	STATUS
ENG	06. Event: Conference	Contributing to the Best Success	IDSA	30/04/2020	17	http	s://www.big-data-value.eu/bdvppp-summit-2020/best-success-	story/	Done
ENG	03. Online: Social Media	Promotion throught official ENG social madia channels	ENG	2019		Worldwide	https://twitter.com/EngineeringSpa https://www.linkedin.com/company/engineering-ingegneria- informatica-spa/	linkedin posts, tweets and retweets	Done
ENG	03. Online: Social Media	Promotion throught official ENG social madia channels	ENG	2020		Worldwide	https://twitter.com/EngineeringSpa https://www.linkedin.com/company/engineering-ingegneria- informatica-spa/	linkedin posts, tweets and retweets	Planned
ENG	03. Online: Social Media	Promotion throught official ENG social madia channels	ENG	2021		Worldwide	https://twitter.com/EngineeringSpa https://www.linkedin.com/company/engineering-ingegneria- informatica-spa/	linkedin posts, tweets and retweets	Planned
ENG	06. Event: Conference	European Big Data Value Forum	BDVA	2-5/11/2020		Germany	https://www.european-big-data-value-forum.eu/	Project dissemination in wide European forum, also required as we're par of	Planned
ENG	10. Publications: White papers	Big Data challenges in Smart Manufacturing Industry (ed. 2019)	BDVA	2020			http://bdva.eu/	A Discussion Paper on Digital Europe Big Data challenges for Smart Manufacturing Industry. The Smart Manufacturing Industry group, in BDVA, is colead by ENG	Planned
ENG	12. Publications: Article / Interview (press, other media	Setting Your Own Federated Learning Test Case	ENG	2020		Worldwide	https://medium.com/swlh/setting-your-own- federated-learning-test-case-f14687e96eef		Done
ENG	12. Publications: Article / Interview (press, other media	How Robots Learn From Each Other	ENG	2020		Worldwide	https://ai.plainenglish.io/federated-machine-learning-in- action_an_efficiency_assessment_b0b5217368cc		Done
ENG	12. Publications: Article / Interview (press, other media	Privacy Preserving Technologies for TrustedData Spaces	BDVA	2021		Worldwide		Book Chapter contributed by MUSKETEER Project	Planned
ENG	12. Publications: Article / Interview (press, other media	Increasing trust within an ecosystem withFederated learning	BDVA	2021		Worldwide		Book Chanter contributed by MUSKETEEP Project	Planned
ENG	12 Publications: Article / Interview (press, other media	Analytics Endersted Machine	ENG	2022		Worldwide	www.eng.it.website	1 post to be published in ENG website	Planned
ENG	12. Publications: Article / Interview (press, other media	How COMAU applies Federated	ENG	2022		Worldwide	www.eng.it website	1 case study to be published in ENG magazine	Planned
ENG	06. Event: Conference	European Big Data Value Forum	BDVA	2021		Worldwide	https://www.european-big-data-value-forum.eu/	Project dissemination in wide European forum, also required as we're par of the PPP	Planned
FCA	04. Event: Workshops	Internal workshop "as is analysis"	FCAITEM	06/03/2019	4	ITALY			Done
FCA	04. Event: Workshops	Internal workshop Manufacturing	FCA ITEM	20/03/2019	4	ITALY			Done
FCA	03. Online: Social Media	Internal communication through Workplace by Facebook	FCA ITEM	07/06/2019	7	ITALY			Done
FCA	04. Event: Workshops	Technical contribution to "Best Success Story" contents definition for BDV	IDSA	30/04/2020	17				Done
FCA	03. Online: Social Media	Internal upgrade project results through Workplace by Facebook	FCA ITEM	30/04/2021	29			Internal sharing of project results with internal dept. Manufacturing Methods, Applications & Tools	Done
HYGEIA	06. Event: Conference	75th Congress of the Hellenic Society of Orthopedic Surgery and	Hellenic Society of Orthopedic Surgery and Traumatology	2-5/10/2019	11	Greece	https://www.eexot2019.gr/	-	Done
HYGEIA	02. Online: Website	Promotion in HYGEIA website	HYGEIA	09/01/2019	10	Greece	www.hygeia.gr		Bone
HYGEIA	03. Online: Social Media	Promotion through HYGEIA Marketing Dpt	HYGEIA	2019, 2020, 2021	all	Greece			Done
HYGEIA	07. Event: Presentation / Lecture	Musketeer Project Presentation to HYGEIA interested parties (doctors, IT	HYGEIA	06/01/2020	19	Greece			Done

HYGEIA	06. Event: Conference	HealthIT Conference 2020	www.boussiasconferences.gr	TBD	I	Greece			Done
HYGEIA	06. Event: Conference	Big Data LDN	info@bigdataldn.com	13-14 November 2019	12	London, UK			Done
HYGEIA	06. Event: Conference	European Congress of Radiology 2020 (ECR 2020)	https://iii.hm/sbb	11-15 March 2020	16	Vienna, Austria	https://iii.hm/sbb		Done
IBM	04. Event: Workshops	Al Law & Ethics Conference	KU LEUVEN	28/02/2019	3	Belgium	https://www.law.kuleuven.be/citip/en/news/item/citip- conference-through-the-looking-glass-of-ai-platforms-between- elobal-enversance-and-techno-regulation-28-02-2019-leuven	MUSKETEER flyer was presented at the event	Done
IBM	06. Event: Conference	BDV meet up	ALL	26-28/06/2019	7	Latvia	http://www.bdva.eu/node/1217	BDV workshops with other projects under the PPP	Done
IBM	06. Event: Conference	ICT proposers' day	ALL	19-20/9/19	10	Finalnd	https://ec.europa.eu/digital-single-market/en/news/digital- excellence-forum-ict-proposers-day-2019	Project dissemination in wide European forum	
IBM	06. Event: Conference	European BDV forum	ALL	14-16/10/2019	11	Finalnd	http://www.big-data-value.eu/ebdvf-2019/	Project dissemination in wide European forum, also required as we're par of the PPP	Done
IBM	04. Event: Workshops	Delivering Data Protection in Real Time Workshop	Oxford University / OASIS	09/09/2019		ик	https://privacyworkshop19.oasis-open.org/71-call-fo	Project dissemination in wide Academic / Industry European forum for Privacy	
IBM	04. Event: Workshops	Theory and Practice of Differential Privacy (TPDP) at CCS 2019	ACM	11/11/2019	12	υк	https://tpdp.cse.buffalo.edu/2019/	Project dissemination in academic forum for differential privacy	Done
IBM	04. Event: Workshops	Privacy in Machine Learning (PriML) at NeurIPS 2019	NeurIPS	14/12/2019	13	Canada	https://priml-workshop.github.io/priml2019/	Project dissemination in academic forum for machine learning with privacy	Done
IBM	04. Event: Workshops	International Workshop on Federated Learning for User Privacy	ICML	17/07/2020	20	Europe	http://federated-learning.org/fl-icml-2020/	Paper submission	
IBM	06. Event: Conference	European Big Data Value Forum	BDVA	04/11/2020	24	Europe	https://european-big-data-value-forum.eu/	Panel Speaker	
IDSA	05. Event: Trade show, exhibitions	Hannover Messe	Hannover Messe	01-05/04/2019	4	Germany	https://www.hannovermesse.de/home	Exibitor (presentation of MUSKETEER among IDSA activities)	Done
IDSA	06. Event: Conference	IDSA Summit	IDSA	25-26/06/2019	6	Germany	https://www.internationaldataspaces.org/	Annual presentation of IDSA activities	Done
IDSA	06. Event: Conference	High level event	IDSA	22/02/2019	2	Germany		Update on IDSA activites with national authorities	Done
IDSA	05. Event: Trade show, exhibitions	IOT Solutions World Congress	IOT Solutions World Congress	29-31/10/2019	10	Spain	https://www.iotsworldcongress.com/	Exibitor (presentation of MUSKETEER among IDSA activities)	Done
IDSA	06. Event: Conference	2nd IDSA Winterdays	IDSA	3-5/12/2019	12	Tbd	2	Annual presentation of IDSA activities	Done
IDSA	05. Event: Trade show, exhibitions	Hannover Messe	Hannover Messe	01/04/2020	4	Germany	https://www.hannovermesse.de/home	Exibitor (presentation of MUSKETEER among IDSA activities)	Rejected
IDSA	05. Event: Trade show, exhibitions	IDSA Virtual Expo	IDSA	20.04-15.05/04/2020	16	Online	https://www.internationaldataspaces.org/idsa-virtual-expo/	Exibitor (presentation of MUSKETEER among IDSA activities)	Done
IMP	09. Publications: Conference papers	Defending against Poisoning Attacks in	ESANN	24-26/04/2019	5	Belgium	https://www.elen.ucl.ac.be/esann/	Conference paper on data poisoning	Done
IMP	06. Event: Conference	IDSA Summit	IDSA	25-26/06/2019	7	Germany	https://www.internationaldataspaces.org/event/idsa-	Annual presentation of IDSA activities. We presented MUSKETEER project at this event	Dane
IMP	02. Online: Website	RISS group Website	Imperial	01/02/2019	3	UK	http://rissgroup.org/	Describe MUSKETEER activities in our research group website at Imperial	
IMP	09. Publications: Conference papers	Byzantine-Robust Federated Machine	AAAI	01/09/2019	10	US	https://aaai.org/Conferences/AAAI-20/	The paper was not accepted (possibly we did not target the right venue). We resubmitted to ICML 2020, one of the top conferences in machine learning. Arxiv preprint available at: https://arxiv.org/pdf/1909.05125.pdf	Rejected
IMP	09. Publications: Conference papers	Poisoning Attacks with Generative Ad	ICLR 2020	25/09/2019	10	Ethiopia	https://iclr.cc/	Paper originally submitted to NeurIPS 2019 on 25/05/2019. The paper was not accepted, but has been revised and resubmitted to ICLR 2020. Paper currently under review. Conference to be celebrated in Ethiopia. (April 2020). (ICLR is one of the top conference in machine learning. Arxiv preprint available at: https://arxiv.org/pdf/1906.07773.pdf. The paper was rejected despite we had a favourable opinion from the majority of the reviewers (we have resubmitted the paper to ICML conference)	Rejected
IMP	02. Online: Website	Personal website	Imperial	15/10/2019	11	UK	https://www.doc.ic.ac.uk/~1munozgo/	Describe MUSKETEER activities in personal websites of Imperial's participants in MUSKETEER	Done

IMP	09. Publications: Conference papers	Ryzantine-Robust Federated Machine	ICML 2020	07/02/2020	14	Austria	https://icml.cc	Paper originally submitted to AAAI 2020 on 5/9/2019. The paper was not accepted, but we resubmitted to ICML 2020, one of the top conferences in machine learning. The paper is currently under review. Arxiv preprint available art https://cr.wiw.org/ord/19/09.00132	Rejected
IMP	06. Event: Conference	Poisoning Attacks with Generative Ad	ICMI 2020	07/02/2020	14	Austria	https://icml.cc	Paper submitted to ICML one of the top conferences in machine learning	Reterred
IMP	05. Event: Conference	Universal Adversarial Perturbations to	ECCV 2020	20/02/2020	14	UK	https://eccv2020.eu/	Paper to be submitted to ICML, one of the top conferences in machine learning. Arxiv pre-print available at https://arxiv.org/pdf/1911.10364.pdf	Re,ected
IMP	06. Event: Conference	IDSA Winterdays	IDSA	3-5/12/2019	12	France	https://www.internationaldataspaces.org/event/2nd-i	We presented MUSKETEER project at this event	Done
IMP	07. Event: Presentation / Lecture	Ericsson Webinar: "Federated Machin	Ericsson	08/04/2020	17	Online	n/a	Presentation of some of the work done in WP5 on the security aspects of federated learning, including the threat model released in deliverable D5.1	Done
IMP	01. Online: Newsletter, email	MUSKETEER Blog Post	MUSKETEER	17/06/2020	19	Online	https://h2020musketeer.medium.com/tackling-the-pri	Blog post about federated learning and the mission and objectives of MUSKETEER.	Done
IMP	06. Event: Conference	Preserving Technologies for Trusted D	IDSA	01/10/2020	22	Online	https://internationaldataspaces.org/videos/	Webinar organized by IDSA to present MUSKETEER and present the security aspects and the architecture of the platform. In collaboration with IDSA and	Done
IMP	08. Event: Hackathon	1st MUSKETEER Hackathon	MUSKETEER	24-25/11/2020	23	Online	.com/e/hackathon-shielding-federated-learning-against-attack	Hackathon on data poisoning attacks against federated machine learning	Done
IMP	10. Publications: White papers	Privacy Preserving Technologies for Tr	BDVA	01/01/2021	25	Online	N/A	Book chapter	Done
IMP	11. Publications: Scientific paper	Data protection by design in AI? The ci	Journal of Computer Law (Computerrecht)	19/05/2021	30	Online	N/A	Paper on a legal journal in collaboration with KUL and TREE (accepted for publication).	Done
IMP	11. Publications: Scientific paper	Security and Robustness in Federated	Editors from IBM (US). To be edited by Springer. Book title: "Federated Learning: A Comprehensive Overview of Methods and Applications"	30/09/2021	34	Online	N/A	Book chapter written in collaboration with IBM on the security aspects of federated machine learning algorithms (under review).	Done
IMP	08. Event: Hackathon	2nd MUSKETEER Hackathon: Attacking	MUSKETEER	28-29/09/2021	34	Online	https://hopin.com/events/musketeer-2nd-hackathon-a	Hackathon to test the robustness of the defensive techniques developed by Imperial College in MUSKETEER to defend against poisoning attacks in federated learning.	Done
IMP	06. Event: Conference	Robust and Efficient Weighting Schem	Asia CCS	18/11/2021	36	Online		Paper to be submitted to Asia CCS, a prestigious security conference. This paper is the result of a collaboration with the Research Institute in Sweden	Planned
IMP	06. Event: Conference	Feature Selective Adversarial Trainin	ICML 2022	27/01/2022		Online		Paper to be submitted to ICML, one of the top conferences in machine	Planned
IMP	04. Event: Workshops	Layerwise Robust Federated Averagin	ICLR 2022	26/02/2022		Online		Workshop Paper to be submitted to ICLR, one of the top conferences in machine learning.	Planned
	06. Event: Conference	Convex Hull Adversarial Training	ICML 2022	27/01/2022		Online		Paper to be submitted to ICML, one of the top conferences in machine	Planned
KUL	04. Event: Workshops	Al Law & Ethics Conference	KU LEUVEN	28/02/2019	3	Belgium	https://www.law.kuleuven.be/citip/en/news/item/citip-	MUSKETEER flyer was presented at the event	Done
KUL	06. Event: Conference	9th Annual Data Protection and Priva	KU LEUVEN (participant)	20/03/2019	4	Belgium	https://eu-ems.com/summary.asp?event_id=4382&page_id=980	MUSKETEER project was informally discussed with some participants at the conference	Done
KUL	04. Event: Workshops	Towards Value Centric Big Data (E-Side	KU LEUVEN (participant)	02/04/2019	5	Belgium	https://www.evensi.be/centric-big-data-connect-people- processes-technology-imec-smit-vub/295256964	MUSKETEER project was informally discussed with some participants at the workshop	Done
KUL	06. Event: Conference	30 Years CITIP	KU LEUVEN	04/10/2019	10	Belgium	https://www.law.kuleuven.be/citip/en/citip-conferences/30- years-icri-cir-citip/aaenda	MUSKETEER poster was presented	Done
KUL	06. Event: Conference	Al Law & Ethics Conference	KU LEUVEN	18/02/2020	13	Belgium	https://www.law.kuleuven.be/citip/en/citip- conferences/lailec/lailec-2020/programme	MUSKETEER flyer and logo were presented at the event	Done
KUL	12. Publications: Article / Interview (press, other media)	"Benefits and challenges of federated	KU LEUVEN	30/11/2021	ti.	34 N.A.	https://h2020musketeer.medium.com/benefits-and-challenges- of-federated-learning-under-the-adpr-15c89ff76d9c	Vulgarization of main findings concerning data protection and federated Jearning via a blogpost	Done
KUL	11. Publications: Scientific paper	"Increasing trust within a dataspace v	KU LEUVEN	30/11/2021		36 N.A.	NA	Vulgarization of legal aspects (data protection aspects) of the use of federated learning in data spaces	Done
KUL	11. Publications: Scientific paper	"Data protection by design in AI? The o	KU LEUVEN	30/09/2021	13	81 N.A.	https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3879613	Scientific publication on opportunuties and challenges of federated learning under the GDPR	Done
KUL	06. Event: Conference	Data Sharing Winterschool	Institut Mines-Télécom, Technical University of Dortmund, Academy for the Industry of the Future, Franco- German University, IDSA	04/12/2020	25	Online	://internationaldataspaces.org/winter-school-learn-from-the-ex;	Presentation on sovereignty, privacy and economy with MUSKETEER as a case- study	Done

KUL	06. Event: Conference	Al Opportunities for the Benelux front	Al4Belgium	10/02/2021	27	Online	https://www.ai4belgium.be/events/webinar-ai-opportunities- for-the-benelux-frontrunners/	Participation in a panel on Al ethics where I briefly discussed my involvement in MUSKETEER and the project's objectives	Bone
KUL	07. Event: Presentation / Lecture	KU Leuven Summer School: Law, Ethics	KU Leuven	29/06/2021	31	Hybrid	https://www.law.kuleuven.be/ai-summer-school/description-ai	Lecture on data protection and Al in which the federated learning approach developed in MUSKETEER was briefly presented	Done
KUL	04. Event: Workshops	Data protection impact assessment: t	KU Leuven	12/10/2021	32	Hybrid	N.A.	Workshop with data protection law experts of the KUL's Center for IT and IP Law	Doné
KUL	06. Event: Conference	Citip's Safe-Deed closing event " Addre	KU Leuven	02/12/2021	N.A	Hybrid	https://www.law.kuleuven.be/citip/en/news/item/safe	Conference on(a.o.) legal challenges of data market places where the MUSKETEER poster will be displayed	Planned
TREE	02. Online: Website	Promotion in TREE website	TREE	January 2019	2	Worldwide	http://www.treetk.com/en/R&D_Musketeer		Done
TREE	12. Publications: Article / Interview (press, other media)	Generation of project brochure	TREE	January 2019	2	Worldwide			Done
TREE	07. Event: Presentation / Lecture	Coffee and Learn. Success case	TREE	February 2019	3	Spain			Done
TREE	12. Publications: Article / Interview (press, other media)	Printing and distribution of project	TREE	May 2019.	6	Europe			Dane
TREE	05. Event: Trade show, exhibitions	Participation with stand in Digital Enterprise show. MUSKETEER dissemination and communication to broad public	DES	21,22,23 May	6	Europe	https://www.des-madrid.com/		Done
TREE	07. Event: Presentation / Lecture	Presentation federated Machine Learning (MUSKETEER)	TREE / IDIAGORAS	June 2019	7	Spain	https://www.youtube.com/watch?v=Llkh5MQZfqc&t=3022s		Done
TREE	07. Event: Presentation / Lecture	Representing MUSKETEER in EBDVF Helsinki 2019	BDVA	October 2019	11	Finland	https://www.european-big-data-value-forum.eu/		Done
TREE	10. Publications: White papers	Contribution to whitepaper "Trends, existing solutions and recommendations for privacy- perserving technologies"	BDVA	July-October 2019	9,10,11,12	Europe	https://www.bdva.eu/sites/default/files/Data%20protection% 20in%20the%20era%20of%20bis%20data%20for%20artificial %20intelligence_BDVA_FINAL.pdf		Done
TREE	07. Event: Presentation / Lecture	Coffee and Learn. Success case MUSKETEER. Machine Learning algortihms and POMs 1, 2, 3	TREE	October 2019	12	Spain			Dane
TREE	07. Event: Presentation / Lecture	Presentation in Big Things 2019	BIG THINGS	November 2019	13	Worldwide	https://www.bigthingsconference.com/	https://www.youtube.com/watch?v=Piid53MwLGA&feature=youtu.be	Done
TREE	08. Event: Hackathon	1st MUSKETEER Hackaton	MUSKETEER Consortium	November 2020	25-36	Europe	https://musketeer.eu/musketeer-1st-hackathon/	In collaboration with MUSKETEER Consortium	Done
TREE	03. Online: Social Media	Promotion throught TREE TW account	TREE	2019.	1 to 12	Worldwide	https://twitter.com/tree_RD		Done
TREE	03. Online: Social Media	Promotion throught TRFE TW account	TREE	2020.	13 to 24	Worldwide	https://twitter.com/tree_RD	https://twitter.com/tree_RD/status/1323565710644269057 https://twitter.com/treelogic/status/1323569013402853376	Dane
TREE	03. Online: Social Media	Promotion throught TREE TW account	TREE	2021.	25 to 36	Worldwide	https://twitter.com/tree RD	https://twitter.com/treelogic/status/1348570626236293121	Dane
TREE	03. Online: Social Media	Promotion throught TREE LinkedIn account	TREE	2020.	1 to 36	Worldwide	https://www.linkedin.com/feed/update/urn:li:activity:672933 1595515367424/		Done
TREE	01. Online: Newsletter, email	MUSKETEER Blog Post	MUSKETEER Consortium	2021.	27	Worldwide	https://h2020musketeer.medium.com/combining-federated- learning-with-privacy-preserving-techniques-to-offer-robust- privacy-d27e693ee469		Dane
TREE	12. Publications: Article / Interview (press, other media)	Book Chapters Title: Technologies and Applications for Big Data Value	BDVA / Springer	2020.	23	Europe		In collaboration with MUSKETEER Consortium	Done
TREE	08. Event: Hackathon	2nd MUSKETEER Hackathon	MUSKETEER Consortium	2021.	34	Europe	https://musketeer.eu/2nd-hackathon/	In collaboration with MUSKETEER Consortium	Done
TREE	11. Publications: Scientific paper	Article_Towards data protection by design in AI	Computerrecht	2021.	26-28	Worldwide		In collaboration with KUL and IMP	Done
TREE	12. Publications: Article / Interview (press, other media	Book chapter Data Platforms	BDVA	2021.	27	Europe		In collaboration with MUKSTEER Consortium	Done
TREE	11. Publications: Scientific paper	Paper JRC Journal	TBD	2021.	TBD	Worldwide		In collaboration with UC3M	Done
TREE	12. Publications: Article / Interview (press, other media	MUSKETEER Blog Post	MUSKETEER Consortium	2021.	34	Worldwide	medium.com/benefits-and-challenges-of-federated-learning-und	In collaboration with KUL and IMP	Done
UC3M	10. Publications: White papers	Data protection in the era of artificial	BDVA	0ct-2019	11	Worldwide	https://www.bdva.eu/node/1384	Preliminary debate	Dane

UC3M	06. Event: Conference	Double Confidential Federated Machi	ICML	13-18/07/2020	19	Austria	https://icml.cc/Conferences/2020	Preliminary research results	Done
UC3M	11. Publications: Scientific paper	First vs Second Order Doubly Confiden	IEEE TRANSACTIONS ON PARALLEL AND DISTRIBUTED SYSTEMS	13/01/2021	26	Worldwide	https://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punun	Research results	Done
UC3M	11. Publications: Scientific paper	Budget Distributed Support Vector Ma	ACM Transactions on Intelligent	27/03/2021	28	Worldwide	tic_journal_pages/tist/cfps/tist-si-cfp-12-2020-federated-learni	Research results	Done
UC3M	11. Publications: Scientific paper	"A Priori" Shapley Data Value Estimat	Pattern Recognition, Elsevier	31/11/2021	36	Worldwide	https://www.journals.elsevier.com/pattern-recognition	Research results	Planned
UC3M	12. Publications: Article / Interview (press, othe	Privacy Preserving Technologies for Tr	BDVA	2021		Worldwide		Book Chapter contributed by MUSKETEER Project	Done
UC3M	12. Publications: Article / Interview (press, othe	Increasing trust within an ecosystem	BDVA	2021		Worldwide		Book Chapter contributed by MUSKETEER Project	Done