D5.2: Dissemination Plan and Dissemination Report

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1. Executive Summary

This report describes the Dissemination Plan and dissemination activities carried out by the MIRAI consortium. The primary objective for dissemination is to awareness about the MIRAI project and technologies, at the national and European level, with the aim of multiplying its impact and subsequent exploitation chances, and more specifically to raise the interest of the industry and other relevant shareholders in the use of data analytics as paradigm for their products and the technologies and tools delivered by MIRAI.

A set of dissemination activities to target those stakeholders has been carefully designed. This includes promoting the project at exhibitions and trade fairs events, organize consortium workshops, publish and present technical papers and tutorials at recognized conferences, produce M.Sc. or Ph.D. theses, maintain a website and social media presence, and disseminate in non-technical platforms. This document reports the MIRAI consortium activities in all those domains.

2. Introduction

This report describes the Dissemination Plan and dissemination activities carried out by the MIRAI consortium.

2.1. Task Description

Task description taken from FPP (pg. 85 of FPP V29).

Task 5.2: Dissemination.

M1–M36, Lead: ISEP, Contributors: 3E, Macq, Shayp, Sirris, NOS, UPORTO, Eliar, Enforma

The primary objective for dissemination is to awareness about the MIRAI project and technologies, at the national and European level, with the aim of multiplying its impact and subsequent exploitation chances. In a first stage, all the stakeholders that may be interested in the main outcomes of the MIRAI project will be identified, after which a set of dissemination activities among those target stakeholders will be carefully designed. The following lines of dissemination will be explored. First, raise the interest of the industry in the use of data analytics as paradigm for their products and the technologies and tools delivered by MIRAI. Second, establish two-way communication channels between the consortium members and potential end-users for disseminating the project outcomes in exhibitions and trade fairs events. Third, support the promotion of selected project results in a non-technical form to be understood by potential end-users, e.g. via newspaper articles. Fourth, by share the MIRAI outcomes with the scientific community, e.g. via technical papers and tutorials at recognized conferences, to keep enhancing the underlying MIRAI concepts. Fifth, identify and observe other research projects with mutual beneficial cooperation. These activities will be supported by several activities such as the setup and maintenance of a public website, the identification of proper conferences as well as journals to publish MIRAI results, the organization of joint events such as workshops or dedicated sessions, and the coordination of efforts for setting up a target of two public events for promoting the MIRAI results to the industrial and scientific community.

2.2. Dissemination Goals set at FPP

Goals set at FPP:

“2.3.5. Quantified objectives and quantification criteria”, Objective 10 (pg. 62 of FPP V29).

Goal/KPI 1: “O10: At least one standardization effort targeted: WP5, T5.1 supporting the EECC RAMEC”

Goal/KPI 2: “T5.2 targets between 1 to 3 events per year per industrial partner disseminating the MIRAI innovations to customers’ network.”

Goal/KPI 3: “In addition, the consortium partners plan >15 scientific papers,“

Goal/KPI 4: “>10.000 stakeholders reached at fairs and conferences presenting the innovations, and through publications (scientific papers, publications at industry-oriented magazines and newsletters, national authorities, ITEA network, etc.)”

2.3. Document Structure

The remainder of this report has the following structure:

- Section 3 describes the Dissemination Plan outlined for the MIRAI project.
- Section 4 reports all dissemination activities carried out by the consortium throughout the project.
- Section 5 assesses the fulfilment of goals set for the Dissemination activities.
- Section 6 presents a conclusion to the document.

3. Dissemination Plan

3.1. Outline of the Plan

The following channels of dissemination are being explored:

1. Disseminating the project outcomes in exhibitions and trade fairs events, to establish two-way communication channels between the consortium members and potential end-users.
    - Activities of fair participation listed in Section 4.1.

2. Organize consortium workshops to project outcomes. Two public events for promoting the MIRAI results to the industrial and scientific community. Identify and observe other research projects for partnering in the organization of said workshops and further boost result exchange.
    - Identified relevant projects are listed in Section 3.4.
    - Events organized by the consortium are listed in Section 4.2.

3. Promote technical papers and tutorials at recognized conferences, to share the MIRAI outcomes with the scientific community and keep enhancing the underlying MIRAI concepts..
    - Conferences and journals identified to publish MIRAI results listed in Section 3.3.
    - Publications produced or submitted so far are described in Section 4.3

4. Promote realization of theses (M.Sc. or Ph.D.) in the scope of the project goals to enhance the innovation impact of the solutions developed under MIRAI.
    - Theses concluded or undergoing under MIRAI are listed Section 4.4.

5. Development and maintenance of a website and social media presence to provide easy access to the project and regular updates to all project shareholders.
    - Online and social media outlets are described in Section 4.5

6. Promotion of selected project results in non-technical platforms (e.g. via newspaper articles) to reach potential end-users.
    - Listed in Section 4.6.

A system for quantifying the reach of these activities will be set up (described in Section 3.5).

3.2. Shareholders

Stakeholders that may be interested in the main outcomes of the MIRAI project are identified next:

- MIRAI partners
- Industrial entities that are part of the value chain (either technology providers, system integrators, or final consumers) related to the UCs addressed by MIRAI, notably distributed renewable energy systems, water consumption monitoring, traffic management, secure Internet provision, and control of dyeing machines.
- Other industrial entities interested in AI/ML at the edge applications.
- Consortiums of related projects (see Section 3.4).
- Funding institutions -- Innoviris (BE), Tubitak (TR), ANI (PT) – and Eureka clusters.
- Academic institutions working on AI, ML and edge.

- General public aware to the application of AI and ML in the everyday life.

3.3. Tentative Conferences & Journals

The following conferences have been identified as potential targets to publications resulting from MIRAI work and outputs

- IEEE RTSS - http://2020.rtss.org/
- IEEE RTAS - https://2020.rtas.org/
- Usenix Security Symposium - https://www.usenix.org/conference/usenixsecurity20
- IEEE WCNC - https://wcnc2020.ieee-wcnc.org/
- IEEE WoWMoM - http://www.cs.ucc.ie/wowmom2020/
- IEEE WFCS - https://www.cister-labs.pt/wfcs2020/
- IEEE INFOCOM - https://infocom2020.ieee-infocom.org/

3.4. Related Projects

The following projects have been identified as having relevant connections to the MIRAI project.

- KDT (former ECSEL) DAÏS - https://dais-project.eu/
- PENTA SunRISE - https://www.project-sunrise.eu/

3.5. Means of Verification of KPIs

To ascertain the reach of the Dissemination Activities carried out by the MIRAI consortium, the following metrics will be used.

Table 3-1 - KPIs to ascertain reach of dissemination activities.

Channel	KPI	Means of verification
Conferences/Fairs	Audience reached	Event official statistics
Online presence / Social media	Visits and Followers	Platform analytics

4. List of Activities Carried Out

4.1. Participation in Fairs, Events, Etc.

Table 4-1 - Participation of the MIRAI consortium in Fairs and Events.

Date	Partner involved	Event	Location	Nature of Activity	URL	Notes	Audience (Estim.)
20/10/2021	Sirris	**ACUMEN2021**	Brussels, Belgium	Presentation on "How to innovate with smart products?"	Link	Presentation on the Shayp case: Link	10
29/04/2021	3E's webinar series	**Power System Flexibility Present and future, challenges and solutions**	Brussels, Belgium	"Power System Flexibility Present and future, challenges and solutions"	Link	Presentation by 3E on use cases and solutions (from real-time monitoring to self consumption and flexibility control)	60
15/06/2021	3E's yearly webinar	**WEBINAR: MARKET TRENDS IN SOLAR & WIND**	Brussels, Belgium	"Storage; what? Why? How?"	Link	Presenting by 3E on storage value stacking for self consumption and flexibility control	100
9-10/ 11/2021	3E's yearly event	**SynaptiQ Connect Days**	Brussels, Belgium	Presentation of SynaptiQ new features	Link	Presentation by 3E on SynaptiQ new features in real-time monitoring and control	60
9/12/2021	Macq, Sirris	**EluciDATA Tech Talk: How to fully exploit the data generated by your assets?**	Brussels, Belgium	Macq testimonial on "Exploiting multi-source mobility data"	Link	Presentation from Macq	40
2/3/2022	Sirris	**TRAIL kick-off meeting**	Brussels, Belgium	Presentation on "The needs and solutions on data compression in edge computing"	Link	Presentation from Sirris	20
8/3/2022	NOS, SIRRIS	**NOS Innovation Days**	Lisboa, Portugal	Presentation of MIRAI project	N/A	Presentation from Sirris	100
10/6/2022	Macq	**ITS congress Brussels**	Brussels	Presentation "Transfer of ANPR technology to the domain of the vulnerable road user"	Link	Presentation from Macq	150
24-25/ 11/2022	All	**EFECS 2022**	Amsterdam, Netherlands	Booth fully dedicated to promoting MIRAI	Link	Demo from Shayp presented	700
11/2022	3E's yearly event	**SynaptiQ Connect Days**	Brussels, Belgium	Presentation of SynaptiQ new features	Link	Presentation by 3E on SynaptiQ new features in real-time monitoring and control	60
14/11/2022	Macq	**ITEA City Advisory Board**	Barcelona	Presentation from Macq	Link	Presentation from Macq	15
26/5/2023	FEUP	**Universidade Andrés Bello, Chile**	Online	Talk entitled "Securing Internet Provision from IoT Attacks"	Link	Presentation by FEUP about on-going cybersecurity research	86
31/05/2023	Shayp, (SIRRIS)	**EDIH Network Annual Summit**	Brussels, Belgium	Inspirational talk on the launch of the European Digital Innovation Hubs	Link	Link	500
8-14/ 06/2023	Eliar	**ITMA exibition**	Milano, Italy	International textile and garment technology exhibition, held every 4 year	Link	Presentation from Eliar: Link	Total: 111000, Eliar Booth: 4000
12-13/ 09/2023	All	**ITEA PO Preparation Days**	Berlin, Germany	Dissemination of the MIRAI project	Link	Dedicated stand	Total: 293; MIRAI Booth: 10
22-23/9/2023	Macq	Macq's 100 years anniversary	Brussels, Belgium	Macq event with promotion of MIRAI project	Link	Two large MIRAI posters in a room dedicated to research projects	175

Figure 4-1 - Selected event: the MIRAI team at EFECS 2022.

4.2. Organized Events

Table 4-2 - Events organized by the MIRAI consortium.

Date	*Partner involved*	*Event*	*Location*	*Nature of Event*	*Papers from consortium*	*URL*	*Notes*	*Audience (Estimated)*
25/ 06/ 2021	All	**1st workshop on "Distributed AI in Resource-Constrained Environments", part of AIAI conference**	Online	Consortium -organized workshop	4	Link	Two sessions: one for papers; second with invited speakers	100
18/ 09/ 2023	All	**1st Workshop on "Distributed Edge AI – Risks and Challenges (DE-AI'23)", part of FedCSIS 2023 conference**	Warsaw ,Poland	Consortium -organized workshop	1	Link	One session for papers	20

4.3. Published Papers

Table 4-3 - Papers published by the MIRAI consortium.

Date	*Partner involved*	*Title*	*Authors*	*Presented at*	*Location*	*Event URL*	*Paper URL*	*Audience (estim.)*
25/ 06/ 2021	All	**An Initial Analysis of the Shortcomings of Conventional AI and the Benefits of Distributed AI Approaches in Industrial Use Cases**	Anna Hristoskova, Nicolás González-Deleito, Sarah Klein, Joana Sousa, Nuno Martins, João Tagaio, João Serra, Carlos Silva, João Ferreira, Pedro M. Santos, Ricardo Morla, Luís Almeida, Baris Bulut, and Sencer Sultanoglu	1st DARE workshop, part of EANN AIAI conference	Online	Link	Link	100

25-06-2021	NOS, ISEP, U.Porto	**Towards a Distributed Learning Architecture for Securing ISP Home Customers**	Pedro M. Santos, Joana Sousa, Ricardo Morla, Nuno Martins, João Tagaio, João Serra, Carlos Silva, Mário Sousa, Pedro Souto, Luís Lino Ferreira, João Ferreira, and Luís Almeida	1st DARE workshop, part of EANN AIAI conference	Online	Link	Link	-
25-06-2021	Sirris	**PFilter: Privacy-aware and secure data Filtering at the edge for distributed edge analytics**	Annanda Rath, Anna Hristoskova, and Sarah Klein	1st DARE workshop, part of EANN AIAI conference	Online	Link	-	-
05/09/2022	Sirris, Shayp	**Anomaly detection on compressed data in resource-constrained smart water meters**	Sarah Klein, Anna Hristoskova, Annanda Rath, Renaud Gonce	17th Conference on Computer Science and Intelligence Systems (FedCSIS)	Sofia, Bulgaria	Link	-	-
06/2023	U.Porto, ISEP	**Implementing and Deploying an ML Pipeline for IoT Intrusion Detection with Node-Red**	Yimin Zhang, Barikisu Asulba, Nuno Schumacher, Mario Sousa, Pedro Souto, Luis Almeida, Pedro Santos, Nuno Martins and Joana Sousa	RAGE workshop (RAGE), part of IEEE CPS-IoT Week.	San Antonio, TX, US, May 2023	Link	Link	15
06/2023	U.Porto, ISEP	**One-Class Models for Intrusion Detection at ISP Customer Networks**	Nuno Schumacher, Pedro M. Santos, Pedro F. Souto, Nuno Martins, Joana Sousa, João M. Ferreira and Luís Almeida	IFIP 19th AIAI conference	León, Spain (Hybrid)	Link	Link	15
06/2023	U.Porto, ISEP	**LEM: a Tool for Large-Scale Workflow Control in Edge-based Industry 5.0 Applications**	Rui Reis, Pedro M. Santos, Mário J. Sousa, Nuno Martins, Joana Sousa, Luis Almeida	5th IoT-I5 workshop, part of IEEE DCOSS	Pafos, Cyprus	Link	Link	15
26/04/2023	U.Porto, ISEP	**Impact of Training Set Size on the Performance and Memory Footprint of Machine Learning Models for Intrusion Detection Systems**	Barikisu A. Asulba, Nuno Schumacher, Pedro F. Souto, Pedro M. Santos, Luis Almeida	5th IoT-I5 workshop, part of IEEE DCOSS	Pafos, Cyprus	Link	Link	15
3-6/07/2023	Eliar, Enforma	**Container Based Distributed Simulation for Temperature Control in Textile Dyeing Processes**	Mustafa Çom, Burak Ketmen, Sena Çağlar, Sencer Sultanoğlu, Barış Bulut	9th CoDIT conference 2023	Rome, Italy	Link	-	15
9/7/2023	U.Porto, ISEP	**[Demo] Edge-based IoT Intrusion Detection**	Yimin Zhang, Barikisu Asulba, Nuno Schumacher, Mario Sousa, Pedro Souto, Luis Almeida, Pedro Santos, Luis Gomes, Nuno Martins and Joana Sousa	Infórum 2023	Porto, Portugal	Link	-	15
12-15/09/2023	U.Porto, ISEP	**Scalable SDN-based MQTT Real-Time Communications for Edge Networks**	Ehsan Shahri, Paulo Pedreiras, Luis Almeida, Joana Sousa	ETFA 2023		Link	Link	15
18/9/2023	U.Porto, ISEP	**Comparing Performance of Machine Learning Tools across Computing Platforms**	Pedro Vicente, Pedro M. Santos, Barikisu Asulba, Nuno Martins, Joana Sousa, Luis Almeida	1st DE-AI workshop, part of 18th FedCSIS 2023	Warsaw, Poland	Link	Link	15

4.4. Theses

Table 4-4 - Theses produced or being produced under MIRAI.

Date	*Partner*	*Student*	*Title*	*Degree*	*Degree Granting Institution*	*Document URL*
July 2022	U.Porto, ISEP	**Nuno Schumacher**	Anomaly Detection Models for Cloud-Edge Intrusion Detection in Customer Networks	M.Sc.	U.Porto	Link
Ongoing	U.Porto	**Barikisu Ahmed**	Reducing resource usage of machine learning models for embedded systems	Ph.D.	U.Porto	N/A
Ongoing	U.Porto	**Yimin Zhang**	TBD	Ph.D.	U.Porto	N/A
Sept. 2023	ISEP	**Pedro Vicente**	Deployment of ML mechanisms for Cybersecurity in Resource-Constrained Embedded Systems	M.Sc.	ISEP	N/A
Feb. 2023	ISEP	**Rui Reis**	A Tool for Large-Scale Workflow Control in Edge-based Industry 4.0 Applications	M.Sc.	U.Porto	N/A

4.5. Online Presence and Social Media

Selected Online and Social Outlets

- Webpage: easy to reach, serves as go-to reference to project.
- LinkedIn: professional social network where stakeholders are more likely to be found.

Discarded (and why):

- Facebook, Instagram: too general public-oriented; reduced impact on stakeholders; additional effort in maintaining multiple social networking outlets (unfit for small consortium).

4.5.1. LinkedIn

Link: https://www.linkedin.com/company/itea-mirai-project/

Publication plan:

- Regular monthly posts, having one MIRAI UC in focus
- Event-driven posts, e.g., publication accepted or participation in event

Current KPIs (as of Nov. 2023):

- Visits: 251
- Unique visitors: 108
- Followers: 54

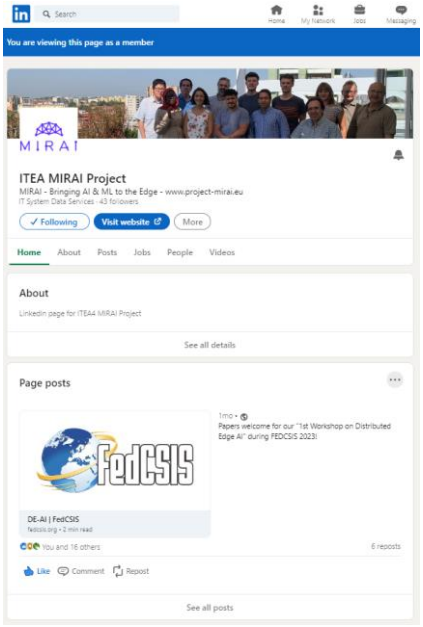

Figure 4-2 - MIRAI LinkedIn webpage.

4.5.2. Website

URL: https://project-mirai.eu/

Structure/Contents:

- Frontpage
- About MIRAI
- Consortium
- Use-Cases
- News & Media
- Deliverables & Papers

Front Page:

Figure 4-3 - MIRAI Webpage - Frontpage

4.6. General Public Dissemination

Table 4-5 - Online Outlets, particularly ITEA Newsletter Stories

Date	Activity	Event / Title	Location	URL	Partern(s) involved
Nov-22	Newsletter	Publication in ITEA4 newsletter (Shayp use case)	Online	Link	Shayp
Jan-23	Newsletter	Publication in ITEA4 newsletter (NOS use case)	Online	Link	NOS
Jun-23	Macq, Sirris	ITEA Webinar	Online	Link	Macq
Jan-2023	Shayp, Sirris	Annual Report	Online	Link	Shayp
Nov-23	Macq	ITEA Newletter (Macq use case)	Online	Link	Macq

5. Assessment vs FPP Goals for Dissemination

Goals set at FPP:

"2.3.5. Quantified objectives and quantification criteria", Objective 10

Goal/KPI 1: "At least one standardization effort targeted supporting the EECC RAMEC"
This goal was strategically dropped as: (i) EECC RAMEC is no longer active; and (ii) consortium is small.

Goal/KPI 2: "Between 1 to 3 events per year per industrial partner disseminating the MIRAI innovations to customers' network."
KPI verification: The following table lists the number of events in which partners were directly involved, based on Table 4-1.

	2021	2022	2023
Macq	2	2	2
3E	3	2	1
Shayp	0	1	2
Enforma	0	1	2
NOS	0	2	1

This yields an average of 1.4 events per partner, per year.

Consortium assessment: Goal met

Goal/KPI 3: ">15 scientific papers"
KPI verification: 12 publications + 3 M.Sc. theses (from Table 4-3 and Table 4-4)
Consortium assessment: Goal met

Goal/KPI 4: ">10.000 stakeholders reached at fairs and conferences presenting the innovations, and through publications (scientific papers, publications at industry-oriented magazines and newsletters, national authorities, ITEA network, etc.)"

KPI verification:

Channel	**Participation in Fairs, Events, etc.**		**Published Papers**		**LinkedIn**	
Metric	Estimated audience		Estimated audience		# visits	
Means of verification	Table 4-1		Table 4-3		LinkedIn	
	Event #	Audience	Paper #	Audience		
	1	10	1	100		
	2	60	2	0		
	3	100	3	0		
	4	60	4	0		
	5	40	5	15		
	6	20	6	15		
	7	100	7	15		
	8	150	8	0		
	9	700	9	15		
	10	60	10	15		
	11	15	11	0		
	12	86	12	10		
	13	500				
	14	4000				
	15	293				Grand Total
	16	175				
Per-channel totals:		6369		185	108	6662

Total: direct estimates of 6662 people reached + 7000+ people (by ITEA's own sources) through the ITEA newsletter stories (Table 4-5)

Consortium assessment: Goal met

6. Conclusion

The present report describes the dissemination activities carried out by the MIRAI consortium as of November 2023 (project end date).