



The Digital Manufacturing and Design (DiManD)

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Summary of journal and conference papers published by ESRs.

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Summary

The deliverable "Summary of Journal and Conference Papers Published by ESRs" provides a comprehensive overview of the research output generated by the Early-Stage Researchers (ESRs) within the DiManD project. Through meticulous investigation and collaboration, our ESRs have produced a remarkable body of work, spanning across various domains, and contributing to the advancement of knowledge in their respective fields. This summary highlights the significant achievements of our ESRs, including the publication of peer-reviewed journal articles and the presentation of research findings at prestigious conferences worldwide. The dissemination of their research underscores the project's commitment to excellence and innovation, showcasing the collective effort and impact of the DiManD consortium in fostering academic excellence and driving scientific progress.

Team involved in deliverable writing: All beneficiaries.

1 Introduction

This deliverable presents the summary of journal and conference papers published by the Early-Stage Researchers (ESRs) within the framework of the Marie Skłodowska-Curie Actions - Innovative Training Network (MSCA-ITN) project called DiManD.

As part of the DiManD project, our ESRs have been actively engaged in cutting-edge research across various disciplines, contributing valuable insights and innovations to the academic community. Through their dedication and collaboration, they have successfully disseminated their research findings through peer-reviewed journal articles and conference presentations.

Key Highlights:

- A total of 26 journal papers have been published by our ESRs, covering a wide range of topics including smart manufacturing, web semantics, artificial intelligence applied in manufacturing or robotics.
- The papers have been published in reputable journals such as Robotics and Computer Integrated Manufacturing or Computers in Industry , showcasing the high quality and significance of our research contributions.
- Additionally, our ESRs have presented their research at prestigious conferences worldwide, with a total of 33 conference papers accepted and presented.
- These conference papers have been well-received by the academic community and have contributed to advancing knowledge in their respective fields.

Overall, the publication and dissemination of research papers by our ESRs demonstrate the impact and relevance of the DiManD project in fostering excellence in research and innovation. We look forward to continuing our collaborative efforts and achieving further success in the future.

Dissemination encompasses scientific outreach, as presented in Sections 2-9, along with additional dissemination and communication activities aimed at a more general public and society, as detailed in Section 10.

2 Conference Papers

In this section, information about the Conference Papers is shown. The information is structured in subsections organized by each of the researchers, (ESRs). Some of the publications have been developed in collaboration so they will be repeated in the different tables.

As a final subsection, the overall result of the project will be added to show all the publications.

2.1 ESR1

Title	Conference	Year	Doi / Link to the publication
Cloud Based Decision Making for Multi-Agent Production Systems	EPIA2021 - 20th EPIA Conference on Artificial Intelligence	2021	https://nottingham-repository.worktribe.com/output/5689336
Service Based Approach to Asset Administration Shell for Controlling Testing Processes in Manufacturing	10th IFAC Conference on Manufacturing Modelling, Management and Control	2022	https://www.sciencedirect.com/science/article/pii/S2405896322019863
Efficient Decision-Making in SMEs: Leveraging Knowledge Graphs with Neo4j and AI Vision	Low-Cost Digital Solutions for Industrial Automation, LoDISA 2023	2023	10.1049/icp.2023.1736
A Framework for Manufacturing System Reconfiguration Based on Artificial Intelligence and Digital Twin	31st International Conference on Flexible Automation and Intelligent Manufacturing, FAIM 2022	2022	10.1007/978-3-031-18326-3_35

1. Table: ESR1 Conference Papers

2.2 ESR2

Title	Conference	Year	Doi / Link to the publication
Optimal Selection of Manufacturing Configurations using Object-Oriented and Mathematical Data Models	International Conference on Industrial Engineering and Applications (ICIEA 2023)	2023	https://ebooks.iospress.nl/doi/10.3233/ATDE230025
Optimal Manufacturing Configuration Selection: Sequential Decision Making and Optimization using Reinforcement Learning	56th CIRP Conference on Manufacturing Systems Procedia CIRP	2023	https://doi.org/10.1016/j.procir.2023.09.112

2. Table: ESR2 Conference Papers

2.3 ESR3

Title	Conference	Year	Doi / Link to the publication
UX- for Smart-PSS: Towards a Context-Aware Framework	CHIRA - 6th International Conference on Computer-Human Interaction Research and Applications	2022	https://doi.org/10.5220/0011379700003323
Exploring the Transformation of user interactions to Adaptive Human-Machine Interfaces	Interacci3n 2023	2023	https://doi.org/10.1145/3612783.3612807

3. Table: ESR3 Conference Papers

2.4 ESR4

Title	Conference	Year	Doi / Link to the publication
Human-Centred Design in the context of Servitization in Industry 4.0. A Collaborative Approach	30th RESER International Congress	2021	http://ebiltegia.mondragon.edu/xmlui/handle/20.500.11984/5314
An overview of Industry 4.0 Applications for Advanced Maintenance Services	International Conference on Industry 4.0 and Smart Manufacturing	2022	https://www.sciencedirect.com/science/article/pii/S1877050922002861

4. Table: ESR4 Conference Papers

2.5 ESR5

Title	Conference	Year	Doi / Link to the publication
Search-based test case selection for PLC systems using functional block diagram programs	34th International Symposium on Software Reliability Engineering (ISSRE)	2023	https://hdl.handle.net/20.500.11984/6290
Implementation of Digital Twin-based Virtual Commissioning in Machine Tool Manufacturing	3rd International Conference on Industry 4.0 and Smart Manufacturing	2021	https://www.sciencedirect.com/science/article/pii/S1877050922002599
A digital twin framework for the simulation and optimization of production systems	54th CIRP Conference on Manufacturing Systems	2021	https://www.sciencedirect.com/science/article/pii/S221282712101026X
Towards a DevOps Approach in Cyber Physical Production Systems Using Digital Twins	SAFECOMP 2020 Workshops	2020	http://ebiltegia.mondragon.edu:8080/xmlui/handle/20.500.11984/5144

5. Table: ESR5 Conference Papers

2.6 ESR6

Title	Conference	Year	Doi / Link to the publication
Simulation of corona electrostatic separator for end-of-life management in printed circuit boards	IDETC/CIE 2021 - ASME 2021 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference.	2021	http://eprints.bice.rm.cnr.it/22308/
Assessing the relationships between interdigital geometry quality and inkjet printing parameters	WCMNM 2021 - World Congress on Micro and Nano Manufacturing	2021	https://doi.org/10.3390/mi13010057
Hyperspectral imaging for non-destructive testing of composite materials and defect classification	Flexible Automation and Intelligent Manufacturing International Conference (FAIM 2022), Detroit, USA	2022	https://doi.org/10.1007/978-3-031-18326-3_39

6. Table: ESR6 Conference Papers

2.7 ESR7

Title	Conference	Year	Doi / Link to the publication
Towards the assessment of performance-based interactions in collaborative CPPS	ISM 2021	2021	10.1016/j.procs.2022.01.364

7. Table: ESR7 Conference Papers

2.8 ESR8

Title	Conference	Year	Doi / Link to the publication
An experimental study of the impact of virtual reality training on manufacturing operators on industrial robotic tasks	9th CIRP Conference on Assembly Technology and Systems	2022	https://doi.org/10.1016/j.procir.2022.02.151
A Framework for Manufacturing System Reconfiguration Based on Artificial Intelligence and Digital Twin	31st International Conference on Flexible Automation and Intelligent Manufacturing, FAIM 2022	2022	10.1007/978-3-031-18326-3_35
Towards quasi-static kinematic calibration of serial articulated industrial manipulators	The 30th Mediterranean Conference on Control and Automation	2023	https://ieeexplore.ieee.org/document/9837167

Feeding-as-a-Service in a cloud manufacturing environment	56th CIRP Conference on Manufacturing Systems, CIRP CMS '23, South Africa	2023	https://doi.org/10.1016/j.procir.2023.09.181
Exploring the limitations and potential of digital twins for mobile manipulators in industry	5th International Conference on Industry 4.0 and Smart Manufacturing (ISM 2023)	2023	10.1016/j.procs.2024.01.110
A Systematic Literature Review: Key Performance Indicators on Feeding-as-a-Service	Advances in Transdisciplinary Engineering, 2024. Swedish Production Symposium 2024	2024	10.3233/ATDE240170

8. Table: ESR8 Conference Papers

2.9 ESR9

Title	Conference	Year	Doi / Link to the publication
Identification and Categorization of Assembly Information for Collaborative Product Realization	8th Changeable, Agile, Reconfigurable and Virtual Production Conference (https://carv2020.com/)	2021	https://www.researchgate.net/publication/355823731_Identification_and_Categorization_of_Assembly_Information_for_Collaborative_Product_Realization#fullTextFileContent
Functional information integration in product development by using assembly features	33rd CIRP Design Conference	2023	https://doi.org/10.1016/j.procir.2023.03.095
Using physical interfaces for product design: from design to assembly planning	56th CIRP Conference on Manufacturing Systems	2023	https://doi.org/10.1016/j.procir.2023.09.167

9. Table: ESR9 Conference Papers

2.10 ESR10

Title	Conference	Year	Doi / Link to the publication
Characteristics of Adaptable Control of Production Systems and the Role of Self-Organization towards Smart Manufacturing	Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2021	2021	https://link.springer.com/chapter/10.1007/978-3-030-78288-7_4
Predictive Manufacturing: Enabling Technologies, Frameworks and Applications	Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2021	2021	https://doi.org/10.1007/978-3-030-78288-7_5
Cloud Based Decision Making for Multi-Agent Production Systems	EPIA2021 - 20th EPIA Conference on Artificial Intelligence	2021	https://nottingham-repository.worktribe.com/output/5689336

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Complexity theory and self-organization in Cyber-Physical Production Systems	54th CIRP Conference on Manufacturing Systems	2021	https://www.sciencedirect.com/science/article/pii/S2212827121012075
Multi-agent based manufacturing: current trends and challenges	ETFA 2021 : 26th IEEE International Conference on Emerging Technologies and Factory Automation	2021	https://nottingham-repository.worktribe.com/index.php/preview/5689450/ETFA-MultiAgent_manufacturing.pdf
Conceptual framework for smart maintenance based on distributed intelligence	5th IFAC Workshop on Advanced Maintenance Engineering, Services and Technology	2022	https://doi.org/10.1016/j.ifacol.2022.09.194
A Bio-inspired and Altruistic-Based Framework to Support Collaborative Healing in a Smart Manufacturing Shop-Floor	14th Advanced Doctoral Conference On Computing, Electrical And Industrial Systems	2023	https://link.springer.com/chapter/10.1007/978-3-031-36007-7_8

10. Table: ESR10 Conference Papers

2.11 ESR11

Title	Conference	Year	Doi / Link to the publication
Predictive Manufacturing: Enabling Technologies, Frameworks and Applications	Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2021	2021	https://doi.org/10.1007/978-3-030-78288-7_5
Cloud Based Decision Making for Multi-Agent Production Systems	EPIA2021 - 20th EPIA Conference on Artificial Intelligence	2021	https://nottingham-repository.worktribe.com/output/5689336
Complexity theory and self-organization in Cyber-Physical Production Systems	54th CIRP Conference on Manufacturing Systems	2021	https://www.sciencedirect.com/science/article/pii/S2212827121012075
Multi-agent based manufacturing: current trends and challenges	ETFA 2021 : 26th IEEE International Conference on Emerging Technologies and Factory Automation	2021	https://nottingham-repository.worktribe.com/index.php/preview/5689450/ETFA-MultiAgent_manufacturing.pdf
Conceptual framework for smart maintenance based on distributed intelligence	5th IFAC Workshop on Advanced Maintenance Engineering, Services and Technology, 26-29 July 2022, Bogota	2022	https://doi.org/10.1016/j.ifacol.2022.09.194

11. Table: ESR11 Conference Papers

2.12ESR13

Title	Conference	Year	Doi / Link to the publication
Optimal Manufacturing Configuration Selection: Sequential Decision Making and Optimization using Reinforcement Learning	56th CIRP Conference on Manufacturing Systems Procedia CIRP	2023	https://doi.org/10.1016/j.procir.2023.09.112
A meta-learning strategy based on deep ensemble learning for tool condition monitoring of machining processes	17th CIRP Conference on Intelligent Computation in Manufacturing Engineering	2023	https://ebiltegia.mondragon.edu/xmlui/bitstream/handle/20.500.11984/6115/A%20meta-learning%20strategy%20based%20on%20deep%20ensemble%20learning%20for%20tool%20condition%20monitoring%20of%20machining%20processes.pdf

12. Table: ESR13 Conference Papers

2.13ESR14

Title	Conference	Year	Doi / Link to the publication
Cloud Based Decision Making for Multi-Agent Production Systems	EPIA2021 - 20th EPIA Conference on Artificial Intelligence	2021	https://nottingham-repository.worktribe.com/output/5689336
Service Based Approach to Asset Administration Shell for Controlling Testing Processes in Manufacturing	10th IFAC Conference on Manufacturing Modelling, Management and Control	2022	https://www.sciencedirect.com/science/article/pii/S2405896322019863
Efficient Decision-Making in SMEs: Leveraging Knowledge Graphs with Neo4j and AI Vision	Low-Cost Digital Solutions for Industrial Automation, LoDISA 2023	2023	10.1049/icp.2023.1736
A Framework for Manufacturing System Reconfiguration Based on Artificial Intelligence and Digital Twin	31st International Conference on Flexible Automation and Intelligent Manufacturing, FAIM 2022	2022	10.1007/978-3-031-18326-3_35
Multi-agent based manufacturing: current trends and challenges	ETFA 2021 : 26th IEEE International Conference on Emerging Technologies and Factory Automation	2021	https://nottingham-repository.worktribe.com/index.php/preview/5689450/ETFA-MultiAgent_manufacturing.pdf

13. Table: ESR14 Conference Papers

2.14 All Conference Papers

In the next table, all the published Conference Papers are listed:

Nº	Authors	Title	Publisher	Year	Doi / Link to the publication
1	Ugarte, Miriam; Etxeberria, Leire; Sagardui, Goiuria	Towards a DevOps Approach in Cyber Physical Production Systems Using Digital Twins	SAFECOMP 2020 Workshops	2020	http://ebiltegia.mondragon.edu:8080/xmlui/handle/20.500.11984/5144
2	Trunal Patil, Lara Rebaioli, Irene Fassi	Simulation of corona electrostatic separator for end-of-life management in printed circuit boards	IDETC/CIE 2021 - ASME 2021 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference.	2021	http://eprints.bice.rm.cnr.it/22308/
3	Federico Bertolucci, Nicolò Berdozzi, Lara Rebaioli, Trunal Patil, Rocco Vertechy, Irene Fassi	Assessing the relationships between interdigital geometry quality and inkjet printing parameters	WCMNM 2021 - World Congress on Micro and Nano Manufacturing	2021	https://doi.org/10.3390/mi13010057
4	Hamood Ur Rehman, Terrin Pulikottil, Luis Alberto Estrada-Jimenez, Fan Mo, Jack C. Chaplin, Jose Barata and Svetan Ratchev	Cloud Based Decision Making for Multi-Agent Production Systems	EPIA2021 - 20th EPIA Conference on Artificial Intelligence	2021	https://nottingham-repository.worktribe.com/output/5689336
5	Nguyen Ngoc Hien, Ganix Lasas, Ion Iriarte	Human-Centred Design in the context of Servitization in Industry 4.0. A Collaborative Approach	30th RESER International Congress	2021	http://ebiltegia.mondragon.edu/xmlui/handle/20.500.11984/5314
6	Miriam Ugarte Querejeta, Gorka Unamuno, Jose Luis Bellanco, Eneko Ugalde	Implementation of Digital Twin-based Virtual Commissioning in Machine Tool Manufacturing	3rd International Conference on Industry 4.0 and Smart Manufacturing	2021	https://www.sciencedirect.com/science/article/pii/S1877050922002599

7	Itziar Ricondo, Alain Portoa, Miriam Ugarte	A digital twin framework for the simulation and optimization of production systems	54th CIRP Conference on Manufacturing Systems	2021	https://www.sciencedirect.com/science/article/pii/S221282712101026X
8	Jose Antonio Mulet Alberola, Irene Fassi	Towards the assessment of performance-based interactions in collaborative CPPS	ISM 2021	2021	10.1016/j.procs.2022.01.364
9	Luis Alberto Estrada-Jimenez, Sanaz Nikghadam-Hojjati, Jose Barata	Characteristics of Adaptable Control of Production Systems and the Role of Self-Organization towards Smart Manufacturing	Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2021	2021	https://link.springer.com/chapter/10.1007/978-3-030-78288-7_4
10	Terrin Pulikottil, Luis Alberto Estrada-Jimenez, Sanaz Nikghadam-Hojjati, Jose Barata	Predictive Manufacturing: Enabling Technologies, Frameworks and Applications	Advanced Doctoral Conference on Computing, Electrical and Industrial Systems, DoCEIS 2021	2021	https://doi.org/10.1007/978-3-030-78288-7_5
11	Luis Alberto Estrada-Jimenez, Terrin Pulikottil, Ricardo Silva Peres, Sanaz Nikghadam-Hojjati, Jose Barata	Complexity theory and self-organization in Cyber-Physical Production Systems	54th CIRP Conference on Manufacturing Systems	2021	https://www.sciencedirect.com/science/article/pii/S2212827121010275
12	Terrin Pulikottil, Luis Alberto Estrada-Jimenez, Hamood Ur Rehman, Jose Barata, Sanaz Nikghadam-Hojjati, Leszek Zarzycki	Multi-agent based manufacturing: current trends and challenges	ETFA 2021 : 26th IEEE International Conference on Emerging Technologies and Factory Automation	2021	https://nottingham-repository.worktribe.com/index.php/preview/5689450/ETFA-MultiAgent_manufacturing.pdf
13	Hamood Ur Rehman, Jack C. Chaplin, Leszek Zarzycki, Fan Mo, Mark Jones, Svetan Ratchev	Service Based Approach to Asset Administration Shell for Controlling Testing Processes in Manufacturing	10th IFAC Conference on Manufacturing Modelling, Management and Control	2022	https://www.sciencedirect.com/science/article/pii/S2405896322019863
14	Mo, Fan.;Chaplin, Jack C.;Sanderson, David;Rehman, Hamood Ur;Monetti, Fabio Marco;Maffei, Antonio;Ratchev, Svetan	A Framework for Manufacturing System Reconfiguration Based on Artificial Intelligence and Digital Twin	31st International Conference on Flexible	2022	10.1007/978-3-031-18326-3_35

			Automation and Intelligent Manufacturing, FAIM 2022		
15	Angela Isabel Carrera-Rivera, Felix Larrinaga, Ganix Lasaa, Giovanna Martinez-Arellano	UX- for Smart-PSS: Towards a Context-Aware Framework	CHIRA - 6th International Conference on Computer-Human Interaction Research and Applications	2022	https://doi.org/10.5220/0011379700003323
16	Nguyen Ngoc Hien, Ganix Lasaa, Ion Iriarte, Gorka Unamuno	An overview of Industry 4.0 Applications for Advanced Maintenance Services	International Conference on Industry 4.0 and Smart Manufacturing	2022	https://www.sciencedirect.com/science/article/pii/S1877050922002861
17	Trunal Patil, Claudia Pagano, Roberto Marani, Tiziana D'Orazio, Giacomo Copani, Irene Fassi	Hyperspectral imaging for non-destructive testing of composite materials and defect classification	Flexible Automation and Intelligent Manufacturing International Conference (FAIM 2022), Detroit, USA	2022	https://doi.org/10.1007/978-3-031-18326-3_39
18	F.M. Monetti, A. de Giorgio, H.Yu, A. Maffei, M.Romero	An experimental study of the impact of virtual reality training on manufacturing operators on industrial robotic tasks	9th CIRP Conference on Assembly Technology and Systems	2022	https://doi.org/10.1016/j.procir.2022.02.151
19	Rea Minango, N., Nafisi, M., Hedlind, M., & Maffei, A.	Identification and Categorization of Assembly Information for Collaborative Product Realization	8th Changeable, Agile, Reconfigurable and Virtual Production Conference (https://carv2020.com/)	2022	https://www.researchgate.net/publication/355823731_Identification_and_Categorization_of_Assembly_Information_for_Collaborative_Product_Realization#fullTextFileContent
20	Terrin Pulikottil, Luis A. Estrada-Jimenez, Jose Barata	Conceptual framework for smart maintenance based on distributed intelligence	5th IFAC Workshop on Advanced Maintenance Engineering, Services and Technology	2022	https://doi.org/10.1016/j.ifacol.2022.09.194

21	Mo, Fan.;Ur Rehman, Hamood;Elshafei, Basem;Chaplin, Jack C.;Sanderson, David;Martínez-Arellano, Giovanna;Ratchev, Svetan	Efficient Decision-Making in SMEs: Leveraging Knowledge Graphs with Neo4j and AI Vision	Low-Cost Digital Solutions for Industrial Automation, LoDiSA 2023	2023	10.1049/icp.2023.1736
22	Agajan Torayev, Zi Wang, Giovanna Martínez-Arellano, Jack C. Chaplin, David Sanderson, Svetan Ratchev	Optimal Selection of Manufacturing Configurations using Object-Oriented and Mathematical Data Models	International Conference on Industrial Engineering and Applications (ICIEA 2023)	2023	https://ebooks.iospress.nl/doi/10.3233/ATDE230025
23	Agajan Torayev, Jose Joaquin Peralta Abadia, Giovanna Martínez-Arellano, Mikel Cuesta, Jack C Chaplin, Felix Larrinaga, David Sanderson, Pedro-José Arrazola, Svetan Ratchev	Optimal Manufacturing Configuration Selection: Sequential Decision Making and Optimization using Reinforcement Learning	56th CIRP Conference on Manufacturing Systems Procedia CIRP	2023	https://doi.org/10.1016/j.procir.2023.09.112
24	Angela Isabel Carrera-Rivera,Felix Larrinaga, Ganix Las, Giovanna Martinez-Arellano	Exploring the Transformation of user interactions to Adaptive Human-Machine Interfaces	Interacciòn 2023	2023	https://doi.org/10.1145/3612783.3612807
25	Miriam Ugarte, Eunkyong Jee, Lingjun Liu, Pablo Valle, Aitor Arrieta, Miren Illarramendi	Search-based test case selection for PLC systems using functional block diagram programs	34th International Symposium on Software Reliability Engineering (ISSRE)	2023	https://hdl.handle.net/20.500.11984/6290
26	Minango, N. R., & Maffei, A.	Functional information integration in product development by using assembly features	33rd CIRP Design Conference	2023	https://doi.org/10.1016/j.procir.2023.03.095
27	Minango, N. R., & Maffei, A.	Using physical interfaces for product design: from design to assembly planning	56th CIRP Conference on Manufacturing Systems	2023	https://doi.org/10.1016/j.procir.2023.09.167
28	Estrada-Jimenez, L.A., Kalateh, S., Hojjati, S.N., Barata, J.	A Bio-inspired and Altruistic-Based Framework to Support Collaborative Healing in a Smart Manufacturing Shop-Floor	14th Advanced Doctoral Conference On Computing, Electrical And Industrial Systems	2023	https://link.springer.com/chapter/10.1007/978-3-031-36007-7_8

29	Jose Joaquin Peralta Abadia, Mikel Cuesta Zabaljauregui, Felix Larrinaga Barrenechea	A meta-learning strategy based on deep ensemble learning for tool condition monitoring of machining processes	17th CIRP Conference on Intelligent Computation in Manufacturing Engineering	2023	https://ebiltegia.mondragon.edu/xm/doi/bitstream/handle/20.500.11984/6115/A%20meta-learning%20strategy%20based%20on%20deep%20ensemble%20learning%20for%20tool%20condition%20monitoring%20of%20machining%20processes.pdf
30	Nikolas Theissen Fabio Marco Monetti Monica Gonzalez Antonio Maffei	Towards quasi-static kinematic calibration of serial articulated industrial manipulators	The 30th Mediterranean Conference on Control and Automation	2023	https://ieeexplore.ieee.org/document/9837167
31	Fabio Marco Monetti, Antonio Maffei	Feeding-as-a-Service in a cloud manufacturing environment	56th CIRP Conference on Manufacturing Systems, CIRP CMS '23, South Africa	2023	https://doi.org/10.1016/j.procir.2023.09.181
32	Dario Antonelli, Khurshid Aliev, Marco Soriano, Kousay Samir, Fabio Marco Monetti, Antonio Maffei	Exploring the limitations and potential of digital twins for mobile manipulators in industry	5th International Conference on Industry 4.0 and Smart Manufacturing (ISM 2023)	2023	10.1016/j.procs.2024.01.110
33	Fabio Marco Monetti, Marco Bertoni, Antonio Maffei	A Systematic Literature Review: Key Performance Indicators on Feeding-as-a-Service	Advances in Transdisciplinary Engineering, 2024. Swedish Production Symposium 2024	2024	10.3233/ATDE240170

14. Table: All Conference Papers



3 Scientific Publications in Journals

In this section, information about the scientific publications in Journals is shown. The information is structured in subsections organized by each of the researchers, (ESRs). Some of the publications have been developed in collaboration so they will be repeated in the different tables.

As a final subsection, the overall result of the project will be added to show all the publications.

3.1 ESR1

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
A framework for manufacturing system reconfiguration and optimisation utilising digital twins and modular artificial intelligence	Robotics and Computer Integrated Manufacturing	2023	https://doi.org/10.1016/j.rcim.2022.102524	JCR Q1
Big Data Life Cycle in Shop-floor –Trends and Challenges	IEEE Access Journal	2023	https://ieeexplore.ieee.org/abstract/document/10061223	JCR Q2
A maturity model for the autonomy of manufacturing systems	International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-10910-7	JCR Q2
PLC Orchestration Automation to enhance Human-Machine Integration in Adaptive	Journal of Manufacturing Systems	2023	https://doi.org/10.1016/j.jmsy.2023.07.015	JCR Q1
Agent-based manufacturing—review and expert evaluation	The International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-11517-8	JCR Q2
Semantic models and knowledge graphs as manufacturing system reconfiguration enablers	Robotics and Computer-Integrated Manufacturing	2024	https://doi.org/10.1016/j.rcim.2023.102625	JCR Q1
A modular artificial intelligence and asset administration shell approach to streamline testing processes in manufacturing services	Journal of Manufacturing Systems	2024	https://doi.org/10.1016/j.jmsy.2023.12.004	JCR Q1

15. Table: ESR1 Journal Papers

3.2 ESR2

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
Towards Modular and Plug-and-Produce Manufacturing Apps	Procedia CIRP	2022	https://doi.org/10.1016/j.procir.2022.05.141	JCR Q2
Big Data Life Cycle in Shop-floor –Trends and Challenges	IEEE Access Journal	2023	https://ieeexplore.ieee.org/abstract/document/10061223	JCR Q2
A maturity model for the autonomy of manufacturing systems	International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-10910-7	JCR Q2
Online and Modular Energy Consumption Optimization of Industrial Robots	IEEE Transactions on Industrial Informatics	2023	https://doi.org/10.1109/TII.2023.3272692	JCR Q1

16. Table: ESR2 Journal Papers

3.3 ESR3

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
Context-awareness for the design of Smart-product service systems: Literature review	Computers in Industry	2022	https://doi.org/10.1016/j.compind.2022.103730	JCR Q1
How-to conduct a systematic literature review: A quick guide for computer science research	MethodsX	2022	https://doi.org/10.1016/j.mex.2022.101895	SJR 0.356
Big data life cycle in shop-floor–trends and challenges	IEEE Access.	2023	https://ieeexplore.ieee.org/abstract/document/10061223	JCR Q2
Structured dataset of human-machine interactions enabling adaptive user interfaces	Scientific Data 10, 831	2023	https://doi.org/10.1038/s41597-023-02741-8	JCR Q1

17. Table: ESR3 Journal Papers

3.4 ESR4

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
Human-Centered Design in Industry 4.0: Case study review and opportunities for future research	Journal of Intelligent Manufacturing	2021	https://doi.org/10.1007/s10845-021-01796-x	JCR Q1
Datasets of skills-rating questionnaires for advanced service design through expert knowledge elicitation	Scientific Data	2022	https://doi.org/10.1038/s41597-022-01421-3	JCR Q1

Human-centered design for advanced services: a multi-dimensional design methodology	Advanced Engineering Informatics	2022	https://doi.org/10.1016/j.aei.2022.101720	JCR Q1
A maturity model for the autonomy of manufacturing systems	International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-10910-7	JCR Q2

18. Table: ESR4Journal Papers

3.5 ESR5

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
PLC orchestration automation to enhance human-machine integration in adaptive manufacturing systems	Journal of Intelligent Manufacturing	2023	https://doi.org/10.1016/j.jmsy.2023.07.015	JCR Q1
Implementation of a holistic digital twin solution for design prototyping and virtual commissioning	IET Collaborative Intelligent Manufacturing	2022	https://doi.org/10.1049/cim.2.12058	SJR 0.568
Virtual commissioning in machine tool manufacturing: a survey from industry = La puesta en marcha virtual en la fabricación de máquinas herramienta: encuesta industrial	Dyna. Ingeniería e Industria	2021	https://www.revistadyna.com/se-arch/virtual-commissioning-in-machine-tool-manufacturing-a-survey-from-industry	JCR Q3

19. Table: ESR5 Journal Papers

3.6 ESR6

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
Cyber-Physical Systems for End-of-Life management of Printed Circuit Boards and Mechatronics products in Home Automation: A review	Sustainable Materials and Technologies (Elsevier)	2022	https://doi.org/10.1016/j.susmat.2022.e00422	JCR Q1
Assessing the relationships between interdigital geometry quality and inkjet printing parameters	Micromachines	2023	https://doi.org/10.3390/mi13010057	JCR Q2

20. Table: ESR6 Journal Papers

3.7 ESR7

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
Cyber-Physical Systems for micro-/nano-assembly operations: A survey	Springer	2021	https://link.springer.com/article/10.1007/s43154-020-00041-2	JCR Q1
Analysis of interactive manufacturing systems: towards a performance-based assessment methodology	IET Collaborative Intelligent Manufacturing	2022	https://ietresearch.onlinelibrary.wiley.com/doi/10.1049/cim2.12063	SJR 0.851
A maturity model for the autonomy of manufacturing systems	International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-10910-7	JCR Q2

21. Table: ESR7 Journal Papers

3.8 ESR8

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
A framework for manufacturing system reconfiguration and optimisation utilising digital twins and modular artificial intelligence	Robotics and Computer Integrated Manufacturing	2023	https://doi.org/10.1016/j.rcim.2022.102524	JCR Q1
A maturity model for the autonomy of manufacturing systems	International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-10910-7	JCR Q2
Towards the definition of assembly-oriented modular product architectures: a systematic literature review	Research in Engineering Design Journal	2023	https://doi.org/10.1007/s00163-023-00427-1	SJR Q2

22. Table: ESR8 Journal Papers

3.9 ESR9

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
Beyond assembly features: Systematic review of the core concepts and perspectives towards a unified approach to assembly information representation	Research in Engineering Design Journal	2022	https://doi.org/10.1007/s00163-022-00400-4	SJR 0.679
A maturity model for the autonomy of manufacturing systems	International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-10910-7	JCR Q2

23. Table: ESR9 Journal Papers

3.10ESR10

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
Self-organization in Smart Manufacturing - Background, Systematic Review, Challenges and Outlook	IEEE Access	2023	https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=10029369	JCR Q2
Big Data Life Cycle in Shop-floor –Trends and Challenges	IEEE Access	2023	https://ieeexplore.ieee.org/abstract/document/10061223	JCR Q2
Agent-based manufacturing—review and expert evaluation	The International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-11517-8	JCR Q2
An Altruistic-based Framework to Support Collaborative Healing of Manufacturing Resources in a Self-organized Shop-floor	IEEE Access	2024	https://ieeexplore.ieee.org/document/10379803	JCR Q2

24. Table: ESR10 Journal Papers

3.11ESR11

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
Self-organization in Smart Manufacturing - Background, Systematic Review, Challenges and Outlook	IEEE Access	2023	https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=10029369	JCR Q2
Big Data Life Cycle in Shop-floor –Trends and Challenges	IEEE Access	2023	https://ieeexplore.ieee.org/abstract/document/10061223	JCR Q2
Agent-based manufacturing—review and expert evaluation	The International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-11517-8	JCR Q2

25. Table: ESR11 Journal Papers

3.12ESR13

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
Big Data Life Cycle in Shop-floor –Trends and Challenges	IEEE Access	2023	https://ieeexplore.ieee.org/abstract/document/10061223	JCR Q2
Monitorización de estado de la herramienta en mecanizado mediante redes neuronales residuales robustas	Dyna	2024	Accepted, waiting to be published	JCR Q4

26. Table: ESR13 Journal Papers

3.13 ESR14

Title	Publisher	Year	Doi / Link to the publication	Impact Factor
A framework for manufacturing system reconfiguration and optimisation utilising digital twins and modular artificial intelligence	Robotics and Computer Integrated Manufacturing	2023	https://doi.org/10.1016/j.rcim.2022.102524	JCR Q1
Big Data Life Cycle in Shop-floor –Trends and Challenges	IEEE Access Journal	2023	https://ieeexplore.ieee.org/abstract/document/10061223	JCR Q2
A maturity model for the autonomy of manufacturing systems	International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-10910-7	JCR Q2
PLC Orchestration Automation to enhance Human-Machine Integration in Adaptive	Journal of Manufacturing Systems	2023	https://doi.org/10.1016/j.jmsy.2023.07.015	JCR Q1
Agent-based manufacturing—review and expert evaluation	The International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-11517-8	JCR Q2
A modular artificial intelligence and asset administration shell approach to streamline testing processes in manufacturing services	Journal of Manufacturing Systems	2024	https://doi.org/10.1016/j.jmsy.2023.12.004	JCR Q1

27. Table: ESR14 Journal Papers

3.14 All Journal Papers

In the next table, all the published Journal Papers are listed:

Nº	Authors	Title	Publisher	Year	Doi / Link to the publication	Impact Factor
1	Nguyen Ngoc Hien, Ganix Lasas, Ion Iriarte	Human-Centered Design in Industry 4.0: Case study review and opportunities for future research	Journal of Intelligent Manufacturing	2021	https://doi.org/10.1007/s10845-021-01796-x	JCR Q1
2	Mulet Alberola, Jose A.; Fassi, Irene	Cyber-Physical Systems for micro-/nano-assembly operations: A survey	Springer	2021	https://link.springer.com/article/10.1007/s43154-020-00041-2	JCR Q1
3	Angela I. Carrasco, Felix Larrinaga, Ganix Lasas	Context-awareness for the design of Smart-product service systems: Literature review	Computers in Industry	2022	https://doi.org/10.1016/j.compind.2022.103730	JCR Q1
4	Hien Nguyen Ngoc, Ganix Lasas, Ion Iriarte, Ariane Atxa, Gorka Unamuno, Gurutz Galfarsoro	Datasets of skills-rating questionnaires for advanced service design through expert knowledge elicitation	Scientific Data	2022	https://doi.org/10.1038/s41597-022-01421-3	JCR Q1
5	Hien Nguyen Ngoc, Ganix Lasas, Ion Iriarte, Ariane Atxa, Gorka Unamuno, Gurutz Galfarsoro	Human-centered design for advanced services: a multi-dimensional design methodology	Advanced Engineering Informatics	2022	https://doi.org/10.1016/j.aei.2022.101720	JCR Q1
6	Trunal Patil, Lara Rebaioli, Irene Fassi	Cyber-Physical Systems for End-of-Life management of Printed Circuit Boards and Mechatronics products in Home Automation: A review	Sustainable Materials and Technologies (Elsevier)	2022	https://doi.org/10.1016/j.susmat.2022.e00422	JCR Q1
7	Fan Mo, Hamood Ur Rehman, Fabio Marco Monetti, Jack C. Chaplin, David Sanderson, Atanas Popov, Antonio Maffei, Svetan Ratchev	A framework for manufacturing system reconfiguration and optimisation utilising digital twins and modular artificial intelligence	Robotics and Computer Integrated Manufacturing	2023	https://doi.org/10.1016/j.rcim.2022.102524	JCR Q1
8	Fan Mo, Miriam Ugarte Querejeta, Joseph Hellewell, Hamood Ur Rehman, Miren Illarramendi Rezabal, Jack C. Chaplin, David Sanderson, Svetan Ratchev	PLC Orchestration Automation to enhance Human-Machine Integration in Adaptive	Journal of Manufacturing Systems	2023	https://doi.org/10.1016/j.jmsy.2023.07.015	JCR Q1

9	Agajan Torayev, Zi Wang, Giovanna Martínez-Arellano, Jack C. Chaplin, David Sanderson, Svetan Ratchev	Online and Modular Energy Consumption Optimization of Industrial Robots	IEEE Transactions on Industrial Informatics	2023	https://doi.org/10.1109/TII.2023.3272692	JCR Q1
10	Carrera-Rivera, A., Reguera-Bakhache, D., Larrinaga, F., Lasa, G.	Structured dataset of human-machine interactions enabling adaptive user interfaces	Scientific Data 10, 831	2023	https://doi.org/10.1038/s41597-023-02741-8	JCR Q1
11	Fan Mo, Jack C. Chaplin, David Sanderson, Giovanna Martínez-Arellano, Svetan Ratchev	Semantic models and knowledge graphs as manufacturing system reconfiguration enablers	Robotics and Computer-Integrated Manufacturing	2024	https://doi.org/10.1016/j.rcim.2023.102625	JCR Q1
12	Hamood Ur Rehman, Fan Mo, Jack C. Chaplin, Leszek Zarzycki, Mark Jones, Svetan Ratchev	A modular artificial intelligence and asset administration shell approach to streamline testing processes in manufacturing services	Journal of Manufacturing Systems	2024	https://doi.org/10.1016/j.jmsy.2023.12.004	JCR Q1
13	Agajan Torayev, Giovanna Martínez-Arellano, Jack C. Chaplin, David Sanderson, Svetan Ratchev	Towards Modular and Plug-and-Produce Manufacturing Apps	Procedia CIRP	2022	https://doi.org/10.1016/j.procir.2022.05.141	JCR Q2
14	Luis Alberto Estrada-Jimenez, Terrin Babu Pulikotttil, Sanaz Nikghadam-Hojjati & Jose Barata	Self-organization in Smart Manufacturing - Background, Systematic Review, Challenges and Outlook	IEEE Access	2023	https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=10029369	JCR Q2
15	Terrin Pulikotttil, Luis A. Estrada-Jimenez, José Joaquín Peralta Abadía, Angela Carrera-Rivera, Agajan Torayev, Hamood Ur Rehman, Fan Mo, Sanaz Nikghadam-Hojjati And Jose Barata	Big Data Life Cycle in Shop-floor –Trends and Challenges	IEEE Access Journal	2023	https://ieeexplore.ieee.org/abstract/document/10061223	JCR Q2
16	Fan Mo, Fabio Marco Monetti, Agajan Torayev, Hamood Ur Rehman, Jose A. Mulet Alberola, Nathaly Rea Minango, Hien Ngoc Nguyen, Antonio Maffei & Jack C. Chaplin	A maturity model for the autonomy of manufacturing systems	International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-10910-7	JCR Q2
17	Terrin Pulikotttil, Luis A Estrada-Jimenez, Hamood Ur Rehman, Fan Mo, Sanaz Nikghadam-Hojjati, Jose Barata	Agent-based manufacturing—review and expert evaluation	The International Journal of Advanced Manufacturing Technology	2023	https://link.springer.com/article/10.1007/s00170-023-11517-8	JCR Q2
18	Federico Bertolucci, Nicolò Berdozzi, Lara Rebaioli, Trunal Patil, Rocco Vertechy, Irene Fassi	Assessing the relationships between interdigital geometry quality and inkjet printing parameters	Micromachines	2023	https://doi.org/10.3390/mi13010057	JCR Q2

19	Luis A. Estrada-Jimenez; Sepideh Kalateh; Sanaz Nikghadam-Hojjati; Jose Barata	An Altruistic-based Framework to Support Collaborative Healing of Manufacturing Resources in a Self-organized Shop-floor	IEEE Access	2024	https://ieeexplore.ieee.org/document/10379803	JCR Q2
20	Miriam Ugarte Querejeta, Leire Etxeberria, Goiuria Sagardui, Gorka Unamuno, Iñigo Bediaga	Virtual commissioning in machine tool manufacturing: a survey from industry = La puesta en marcha virtual en la fabricación de máquinas herramienta: encuesta industrial	Dyna. Ingeniería e Industria	2021	https://www.revistadyna.com/search/virtual-commissioning-in-machine-tool-manufacturing-a-survey-from-industry	JCR Q3
21	Jose Joaquin Peralta Abadia, Mikel Cuesta Zabaljauregui, Felix Larrinaga Barrenechea	Monitorización de estado de la herramienta en mecanizado mediante redes neuronales residuales robustas	Dyna	2024	Accepted, waiting to be published	JCR Q3
22	F.M. Monetti, A. Maffei	Towards the definition of assembly-oriented modular product architectures: a systematic literature review	Research in Engineering Design Journal	2023	https://doi.org/10.1007/s00163-023-00427-1	SJR Q2
23	Angela Carrera-Rivera, William Ochoa, Felix Larrinaga, Ganix Lasa.	How-to conduct a systematic literature review: A quick guide for computer science research	MethodsX	2022	https://doi.org/10.1016/j.mex.2022.101895	SJR 0.356
24	Miriam Ugarte, Miren Illarramendi, Gorka Unamuno, Jose Luis Bellanco, Eneko Ugalde, Antonio Valor Valor	Implementation of a holistic digital twin solution for design prototyping and virtual commissioning	IET Collaborative Intelligent Manufacturing	2022	https://doi.org/10.1049/cim2.12058	SJR 0.568
25	Jose A. Mulet Alberola, Irene Fassi	Analysis of interactive manufacturing systems: towards a performance-based assessment methodology	IET Collaborative Intelligent Manufacturing	2022	https://ietresearch.onlinelibrary.wiley.com/doi/10.1049/cim2.12063	SJR 0.851
26	Nathaly Rea Minango, Antonio Maffei	Beyond assembly features: Systematic review of the core concepts and perspectives towards a unified approach to assembly information representation	Research in Engineering Design Journal	2022	https://doi.org/10.1007/s00163-022-00400-4	SJR 0.679

28. Table: All Journal Papers

4 Book Chapter

In this section, information about the scientific publications in Book Chapters is shown. In this case, the result is one publication that was performed in collaboration between some of the ESRs and supervisors.

Authors	Title	Publisher Edition	Year	Doi / Link to the publication
Luis Alberto Estrada Jimenez; Terrin Babu Pulikottil; José Barata; Sanaz Nikghadam Hojjati; Hien Ngoc Nguyen; Agajan Torayev; Hamood Ur Rehman; Fan Mo	Integration of cutting-edge interoperability approaches in Cyber-Physical Production Systems and Industry 4.0.	IGI Global Design, Applications, and Maintenance of Cyber-Physical Systems	2021	https://www.igi-global.com/chapter/integration-of-cutting-edge-interoperability-approaches-in-cyber-physical-production-systems-and-industry-40/281772

29. Table: Book Chapter

5 Under Evaluation Research Work

In this section we present those papers that at the closing date of the project have been submitted for evaluation for publication but have not yet received a response or are still working on.

Nº	ESR	Title	Status
1	3	A context-aware framework for recommendation-based adaptive user interfaces in Smart Product-Service System.	Expected response by May 2024
2	3	A framework for the transformation of user interactions to Adaptive human-machine interfaces: A general overview	Expected response by May 2024
3	8	Empowering Autonomous Industrial Mobile Manipulators through Cognitive Digital Twins	First review June 30 th 2024
4	9	Assembly features: a contract bringing in manufacturing early in the design discussions	Expected response by June 2024
5	13	Self-diagnosis service to support analysis of production performance, monitoring and optimisation activities	In progress
6	13	OptiTwin conference paper for ETFA 2024: OptiTwin: Data-Driven Machining Process Optimization Platform for SMEs	In progress
7	13	Milling dataset descriptor: TOCOMON - Face-milling dataset for smart tool condition monitoring	In progress

30. Table: Under Evaluation Papers

6 Exploitable Results

In this section we present those Exploitable Results that have been identified at the closing date of the project.

Nº	ESR	Exploitable Result
1	2	Both developed software solutions can be commercially exploited for manufacturing settings: https://github.com/torayeff/fanucpy/ https://github.com/torayeff/mfgrl
2	5	The key values of my research are the capability to generate automated test cases for FBD programs, cost-effective testing of PLC programs, and a testing framework for testing PLCOpen standardised IEC 61131-3 FBD program. These value offerings differentiate us from other companies testing solutions, which are mainly focused on functional testing (e.g. the TwinCAT unit testing framework). These values will be further strengthened if new regulations enforce the standardisation and interoperability of PLC programs. In addition, volatile markets with unprecedented market demand in terms of volume, product variability and customised
3	9	Java application for CAD-file enrichment with assembly features, according to ISO 10303 "Assy helper". It will be assessed for patent/registration later this year.
4	13	It is expected to exploit a tool condition monitoring service for milling in the future. However, an exploitation plan has not been defined yet.

31. Table: Exploitable Results

7 Data Sets

In this section we present those Data Sets that have been published or expected to be published.

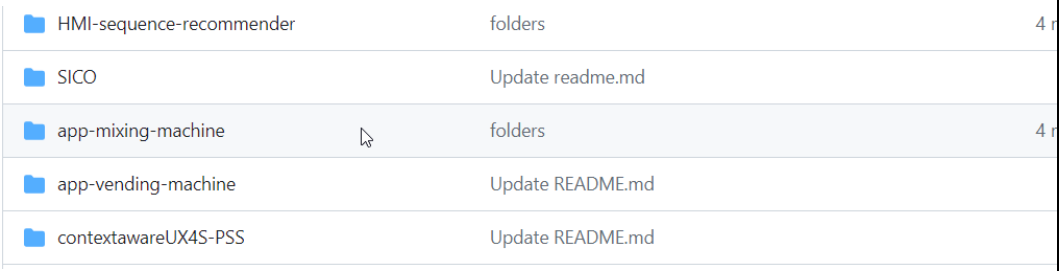
Nº	ESR	Data Sets
1	3	Carrera-Rivera, Angela; Reguera-Bakhache, Daniel; Larrinaga, Felix; Lasa, Ganix; Garitano, Iñaki (2023). Hmi elements (hmi_elements.csv). figshare. Dataset. https://doi.org/10.6084/m9.figshare.24162042.v1
2	3	Carrera-Rivera, Angela; Reguera-Bakhache, Daniel; Larrinaga, Felix; Lasa, Ganix; Garitano, Iñaki (2023). Users (users.csv). figshare. Dataset. https://doi.org/10.6084/m9.figshare.24162060
3	3	Carrera-Rivera, Angela; Reguera-Bakhache, Daniel; Larrinaga, Felix; Lasa, Ganix; Garitano, Iñaki (2023). User Interaction sequences (sequences_df_prep_EN.csv). figshare. Dataset. https://doi.org/10.6084/m9.figshare.24162096
4	3	Carrera-Rivera, Angela; Reguera-Bakhache, Daniel; Larrinaga, Felix; Lasa, Ganix; Garitano, Iñaki (2023). Raw interactions (raw_interactions.csv). figshare. Dataset. https://doi.org/10.6084/m9.figshare.24162135
5	3	Carrera-Rivera, Angela; Reguera-Bakhache, Daniel; Larrinaga, Felix; Lasa, Ganix; Garitano, Iñaki (2023). User interface description (ui.json). figshare. Dataset. https://doi.org/10.6084/m9.figshare.24162207

6	4	Nguyen, N. H., Lasa, G., Iriarte, I., Atxa, A., Unamuno, G., & Galfarsoro, G. (2022a). Datasets of skills-rating questionnaires for advanced service design through expert knowledge elicitation. <i>Scientific Data</i> , 9(1), 321. https://doi.org/10.1038/s41597-022-01421-3
7	13	It is expected to publish a face milling dataset, comprising 67 face milling experiments under 8 cutting conditions and 4 wear levels

32. Table: Published Data Sets

8 Research Results on GitHub or Other Repositories

This section shows the research results that have been developed during the project lifecycle and that are shared on GitHub or other repositories.

Nº	ESR	Research Result Repository
1	2	Software tools developed by ESR2: https://github.com/torayeff/fanucpy/ https://github.com/torayeff/mfgri
2	3	https://github.com/mu-sse/adaptiveUIs-project 
3	4	Nguyen Ngoc, Hien; Lasa, Ganix ; Iriarte, Ion ; Atxa, Ariane ; Unamuno, Gorka ; Galfarsoro , Gurutz (2024), "Expert evaluation: Datasets of skill-rating questionnaires for advanced service design through Analytical Hierarchy Process", Mendeley Data, V5, doi: 10.17632/7brkgztjdx.5
4	5	Available in: https://figshare.com/s/b59e3b94fe495e5e78dc Intention to publish in: https://github.com/mu-sse
5	13	It is intended to share an AutoML code, as well as transfer and continual learning code, as a result of the final paper of the thesis on GitHub https://github.com/spartanjoax .

33. Table: Results in repositories

9 Thesis and Current Status of the ESRs

In this section, the status, and current positions of the Early-Stage Researchers (ESRs) within the DiManD project are presented. The table below provides a concise summary of their current statuses.

ESR	Status of the Thesis	Current Position
1	PhD Obtained.	Researcher at U. Nottingham
2	PhD Obtained.	Co-founder and CEO at https://robominder.ai
3	PhD to be defended in May 2024	PhD candidate at Mondragon Unibertsitatea
4	PhD Obtained.	Teacher in Mondragon Unibertsitatea - Faculty of Engineering
5	PhD Obtained.	Researcher and Lecturer at Mondragon Unibertsitatea / Software and Systems engineering research group / Electronics and Computer Science department
6	PhD Obtained.	Research and development officer (Industry).
7	Not obtained.	Working on an Industrial company as Engineer in Spain
8	PhD to be defended by the end of 2024. (Sweden 4-year PhDs)	Ph.D. student at KTH Royal Institute of Technology
9	PhD to be defended by the end of 2024 (Sweden 4-year PhDs)	Doctoral student. KTH Royal Institute of Technology (Until 31-12-2024). Academic position.
10	PhD to be defended by the end of 2024	Researcher at UNINOVA
11	PhD to be defended by the end of 2024. Not confirmed	Researcher at KU Leuven
12	Not obtained.	
13	PhD to be defended by May 2025 ESR 13 joined DiManD in April 2022.	PhD candidate at Mondragon Unibertsitatea
14	PhD Obtained.	Robotics and Autonomous Control Systems Engineer at TQC

34. Table: Thesis and Current Position Status

As of the present moment, all ESRs are actively engaged in roles directly related to their respective projects within the DiManD initiative. Notably, a significant portion of the cohort, accounting for 43%, has successfully defended and obtained their Ph.D. degrees. Encouragingly, an equivalent proportion of 43% is on track to defend their theses before the conclusion of 2024. This achievement underscores the dedication and progress of the ESRs within the project, reflecting positively on the overall advancement of the DiManD initiative.

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10 Other Dissemination Results

In this section, we present various forms of dissemination activities conducted throughout the DiManD project. The table provided below offers a condensed overview of these activities, showcasing the breadth and scope of our dissemination efforts.

Type of activity: <ul style="list-style-type: none"> • Organization of conference • Organization of workshop • Participation to a conference • Participation to a workshop • ... 	Date	Venue / Country	Event	URL	Audience targeted / Size	Partner involved
Participation to a conference (presentation only, “Development of a human-centered CPPS framework for robotic micro-assembly”, Jose Antonio Mulet Alberola, Buddhi Charitha Liyanapathirana, Irene Fassi)	23/08/2021 - 27/08/2021	Lyon, France	2021 IEEE 17th International Conference on Automation Science and Engineering	https://case2021.sciencesconf.org/		STIIMA
Participation to a conference (presentation only, “Habilitadores tecnológicos en la Industria 4.0”, Nathaly Rea Minango)	September, 3rd. 2021	Ecuador (remote)	II CONGRESO DE CIENCIA Y TECNOLOGÍA ESPE 2021 CON ENFOQUE EN INGENIERÍA AUTOMOTRIZ Y MECATRÓNICA- SECCIÓN MECATRÓNICA	https://www.facebook.com/ESPE.LTGA/videos/2620700151569539 (13m30s - 1h20m48s)	Undergraduate students, Mechatronics engineering program. Universidad de las Fuerzas Armadas ESPE Sede Latacunga.	KTH
Conference Dissemination Event, presentation of the DiManD project - Ngoc Hien Nguyen, Jose Antonio Mulet Alberola, Miriam Ugarte Querejeta.	2021/11/19	Linz, Austria	International Conference on Industry 4.0 and Smart Manufacturing (ISM 2021)	http://www.msc-les.org/ism2021/	Academic and companies	STIIMA, MGEP
Participation to a workshop. Ngoc Hien Nguyen (ESR4)	2022/5/30	Arrasate, Spain	Design Konferenziak (DBZ), 2022.		Academic and companies	MGEP
Participation to the Science is Wonderful event organized by MSCA Actions (Ngoc Hien Nguyen)	2024/04/25-26	Brussels	Science is Wonderful!	https://marie-sklodowska-curie-actions.ec.europa.eu/science-is-wonderful	school classes, families, fans of science	MGEP

35. Table: Other Dissemination

Furthermore, it is worth highlighting that by the end of April 2024, ESR4 has engaged in an event organized by MSCA Actions, entitled "Science is Wonderful." This participation not only reinforces DiManD project's commitment to scientific dissemination but also provides an invaluable platform for showcasing innovative work and achievements within the initiative.

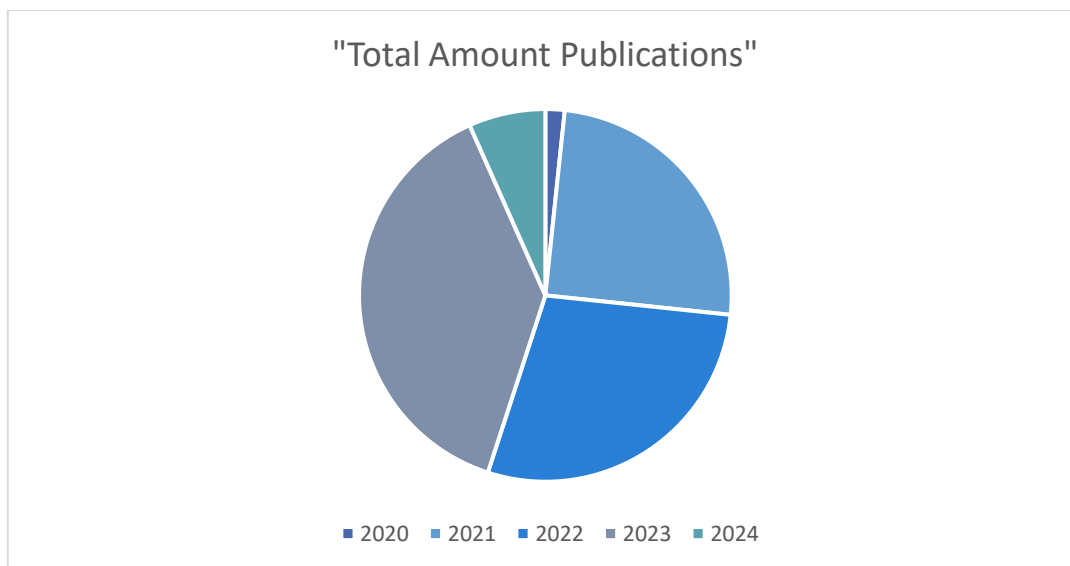
11 Conclusions

This deliverable presents the research results obtained during the execution of the DiManD project. In this final section we will provide a concise summary of all research outcomes, allowing for a comprehensive overview of the project's findings.

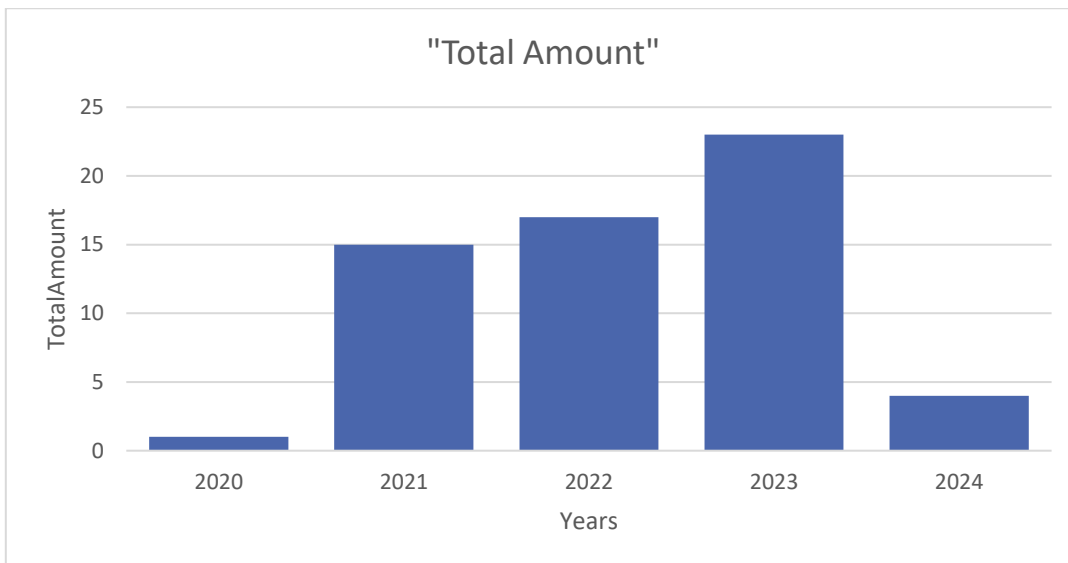
In the next table and graphics, we present a summary of the publications, both in journals and conferences, resulting from the research efforts within the DiManD project.

Years	Total Amount	Nº Conferences	Nº Journals	BookChapter
2020	1	1		
2021	15	11	3	1
2022	17	8	9	
2023	23	12	11	
2024	4	1	3	
TOTAL	60	33	26	1

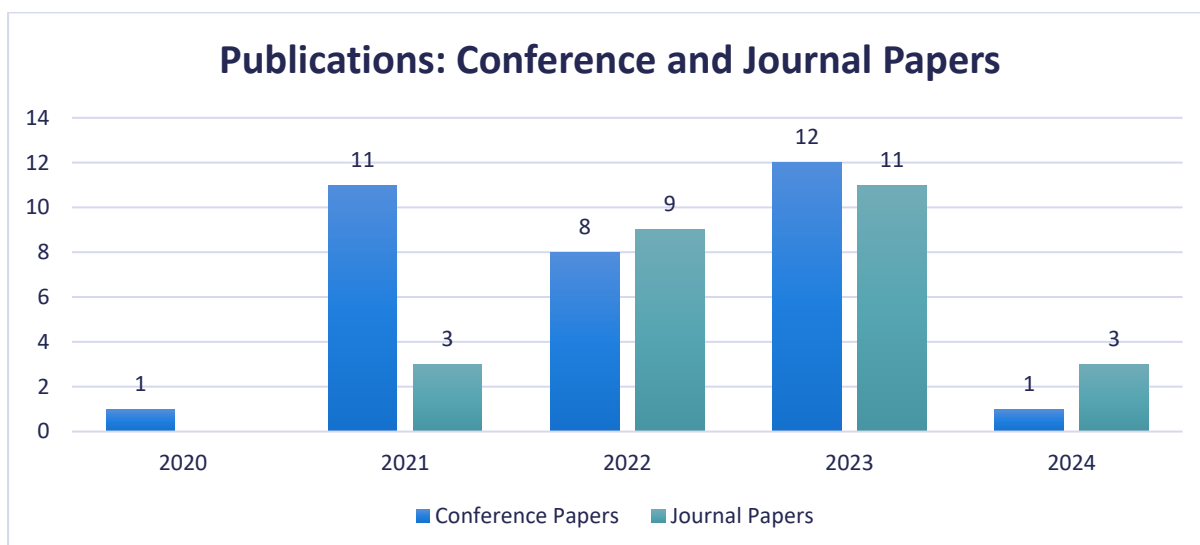
36. Table: Research Dissemination Result Summary



1. Figure: Research Dissemination Result Summary



2. Figure: Research Dissemination Result Summary by Years (Total)



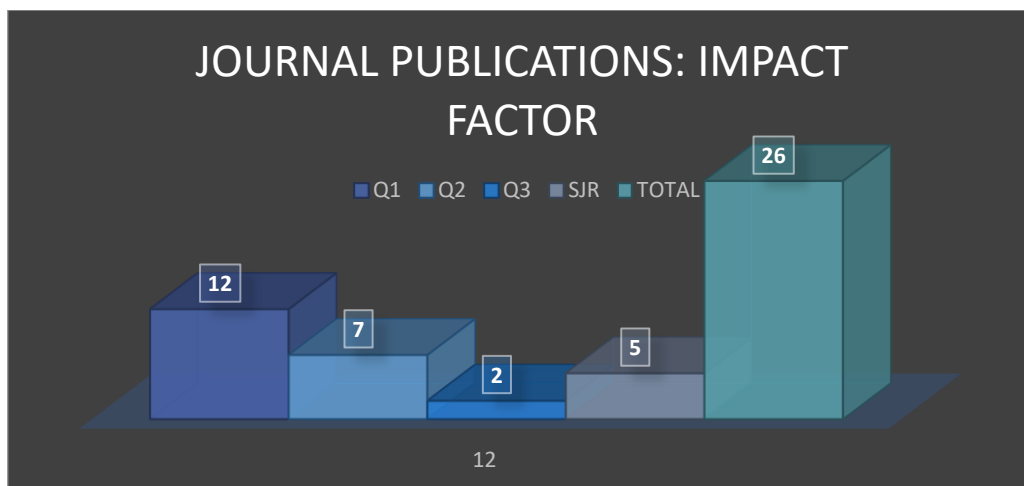
3. Figure: Research Dissemination Result Summary by Years (Conferences and Journals)

In conclusion, the years 2022 and 2023 emerged as the periods with the highest number of publications, which is unsurprising given that these years coincided with the active research phases conducted by the ESRs. This trend reflects the culmination of their dedicated efforts and signifies the productive outcome of their research endeavors during this period.

Furthermore, it is noteworthy to emphasize that initially, the works were predominantly published in conferences. As the research matured and evolved, there was a discernible shift towards securing more publications in high-impact journals. This transition underscores the progression of the research

from its early stages to more advanced phases, reflecting the increasing depth and significance of the findings generated by the DiManD project.

In the following graph, the impact factor of publications in journals is depicted, classified by quartiles.



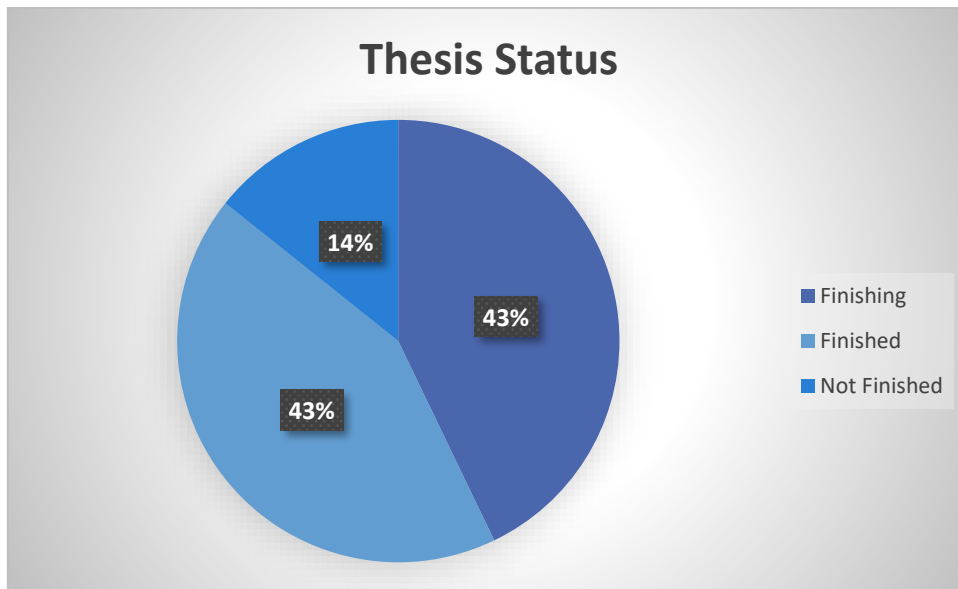
4. Figure: Journal Publications by Impact Factor

It can be concluded that nearly half of the publications have been made in high-impact journals (Q1), totaling 12. Additionally, those currently under evaluation will be added to this count.

If we look at the theses defended at the end of the project, the results are also satisfactory. 43% have already defended their theses, and it is expected that the remaining 43% will do so during the year 2024. It is important to consider that, for example, in Sweden, theses are required to have a duration of 4 years, and therefore it has not been possible to defend them during the project.

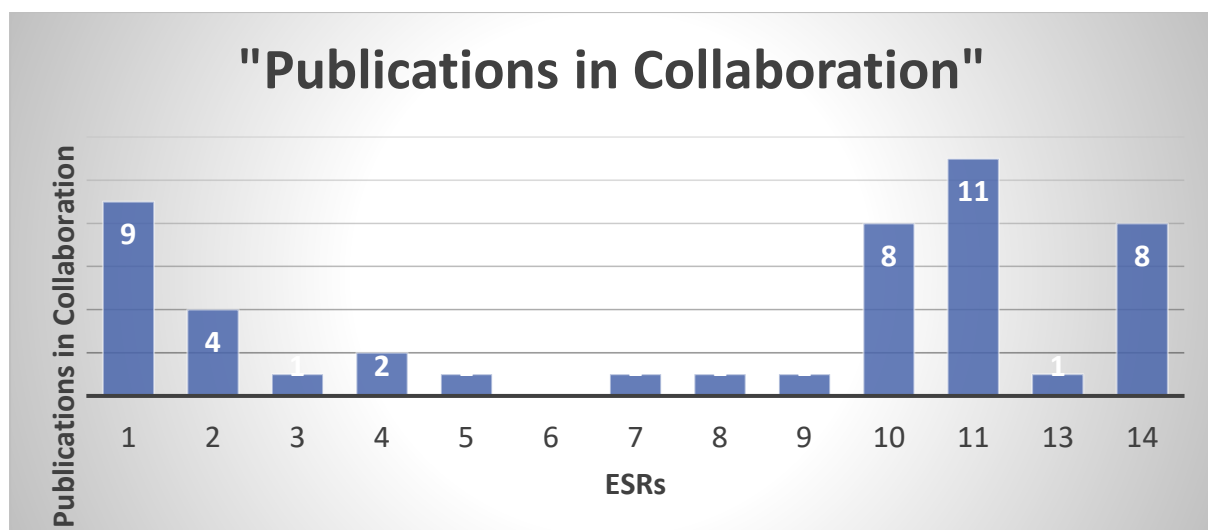
ESRs	Thesis Status	Year
1	Finished	2023
2	Finished	2023
3	Finishing	2024
4	Finished	2023
5	Finished	2023
6	Finished	2023
7	No finished	
8	Finishing	2024
9	Finishing	2024
10	Finishing	2024
11	No finished - Finishing	2024-2025
12	Not finished	
13	Finishing	2025
14	Finished	2024

37. Table: Research ESR's Thesis status



5. Figure: Thesis Status

Finally, it is also important to highlight the collaboration that has existed among the ESRs, demonstrating that the DiManD project has truly been a research network. Evidence of this is the number of publications that the ESRs have produced during the project. The following table provides a summary of this.



6. Figure: ESR's publications in collaboration

In conclusion, the DiManD project has achieved significant milestones and demonstrated notable success across various facets of research, dissemination, and collaboration. The dedication and effort of the Early-Stage Researchers (ESRs) have yielded a substantial number of publications, reflecting the project's robust research output. Moreover, the project has fostered a collaborative environment among the ESRs, underscoring the effectiveness of the research network established. Despite

challenges such as thesis duration requirements in certain regions, the project has maintained momentum, with a substantial percentage of theses already defended and others slated for completion in 2024. Overall, the DiManD project stands as a testament to the power of interdisciplinary collaboration and diligent research efforts, contributing valuable insights to the field of [insert relevant field].

12 Versions

D6.11 Summary of journal and conference papers published by ESRs	
Version - Date	Comments & Recommendations
V0.1 – 30/01/2024	First Integrated version of the document
V1.0 – 31/03/2024	First reviewed version of the document