Project Title:

THE FOF-DESIGNER:
DIGITAL DESIGN SKILLS FOR FACTORIES OF THE FUTURE

Project Acronym:
DigiFoF

Grant Agreement number:
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Subject:

D.8.3. Scientific and press articles, white paper[1]

Dissemination Level:

PUBLIC

Lead Organisation:

EMSE

Project Coordinator:

ULBS

Contributors:

All Partners

Reviewers:

CIRIDD

Revision	Preparation date	Period covered	Project start date	Project duration
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[1] "Any communication or publication related to the action, made by the beneficiaries jointly or individually in any form and using any means, shall indicate that it reflects only the author's view and that the Agency and the Commission are not responsible for any use that may be made of the information it contains."

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1 Introduction

DigiFoF is a multidisciplinary project resulting from collaboration between academic and industrial partners to produce a collection of scientific-pragmatic outcomes.

The objective of deliverable 8.3 is to provide a list of scientific disseminations representing the academic aspects of the project. This deliverable facilitates sharing the academic knowledge through the network as well as with the whole FoF community. These disseminations publish the project outcomes and share its approach.

This document is organized based on 3 main categories of scientific dissemination as:

- Scientific Disseminations (in Events, Journals, Conferences and Book publications): The project will produce various scientific papers presenting in events, journals and confernces. These papers are presented in Section 2.
- Project White Papers: The project partners will collaborately produce one white paper. The details of this paper is presented in Section 3.
- Press and Network Dissemination: Each partner will produce these papers either in english or in their local language. The detail of these papers is presented for each country each Section 4.

2 Scientific Disseminations

Scientific disseminations are produced by partners either in collaboration or based on special results or approach in their organizations. Three types of references for scientific disseminations are events, journals and conferences. The total number of contributions per country is presented in the table below.

Partners	Number of Scientific Event Organization	Number of Publications in Scientific Journals and Books	Number of Publications in Scientific Conferences
Austria	1 (2019, 2021) + 1 Collaboration + 3 Nemo Days (2021)	2 (2021, 2021) + 1 Book	2
France	2 (2019,2021)	3 (2019, 2021, 2021) + 1 collaboration	8 + 2 collaborations
Germany	2 (2019, 2021) + 1 collaboration	1 Collaboration (2020) + Book collaboration	2 (2021)
Italy	1 Collaboration	1 (2020) + 1 collaboration	-
Poland	1 (2019)	2 (2020-2021)	-
Portugal	1(2019) 3 (2020)	-	3
Romania	3 (2019, 2020, 2021)	2(2020) 1(2021)	6 + 1 collaboration

2.1 Dissemination in Scientific Events

Disseminations in scientific events are any publication presented in academic conferences, congresses or workshops.
The details of all the above mentioned disseminations are presented hereafter.

1. Special session coordinated by ULBS: Training workforce skills in digitalization era of Factory of the Future	
Type of event	The 9th International Conference on Manufacturing Science and Education - MSE 2019 – SESSION 14 – TRAINING WORKFORCE SKILLS IN DIGITALIZATION ERA OF FACTORY OF THE FUTURE
Subject	Training workforce skills in digitalization era of Factory of the Future
Abstract	Industry 4.0, Smart Manufacturing, Factories of the Future (FoF) all describe aspects of the heralding era of digitalization of manufacturing aiming to interconnect every step of the manufacturing process and seamlessly integrate the physical and digital world. In FoF a central computer organizes the intelligent networking of all subsystems, suppliers and customers into one system. All relevant requirements concerning manufacturing and product are confirmed at design time, while execution takes place autonomously as ICT and automation are integrated. In the context of digitalization we consider there are three kind of challenges: one which targets the companies, other which target the employees, and the last one aiming the educational system which should include in its curricula bachelor and master study programs which prepare students for the following jobs: Virtual Reality/Augmented Reality System Specialist, Digital Manufacturing Engineer, Digital Factory Automation Engineer, Chief Digital Officer, etc. The main important challenge is represented by educational system, how prepared is to provide students, future employees, the digital competences necessary for the Factories of the Future. What are the structural and curricular measures Higher Education Institutions need to take in order to align engineering education, especially in the design of all constituents of Factories of the Future, with the need of competences in new manufacturing era?
Topics of Interest	• Modeling tools for manufacturing processes • Problem based learning in manufacturing systems design • Digital design skills for factories of the future
Organizers	Prof. Adrian Florea, Prof. Nicolae Cofaru / “Lucian Blaga” University of Sibiu, Romania, Faculty of Engineering
Papers	• Daniel Volovici and Daniel-Cristian Craciunean. MM-DSL, SUPPORT FOR IMPLEMENTING MODELING TOOLS FOR MANUFACTURING PROCESSES • Adrian Florea. DIGITAL DESIGN SKILLS FOR FACTORIES OF THE FUTURE

1. Special session coordinated by ULBS: Training workforce skills in digitalization era of Factory of the Future	
	• Ion Mironescu. AN ADOxx BASED ENVIRONMENT FOR PROBLEM BASED LEARNING IN MANUFACTURING SYSTEMS DESIGNS

2. Scientific workshop at PRO-VE 2019: Collaborative Decision-Making for Value creation Networks life-cycle management	
Type of event	Scientific workshop composed with two special sessions
Subject	Collaborative Decision-Making for Value creation Networks life-cycle management
Abstract	Value creation networks aim at efficient and flexible industrial symbioses of enterprises contributing to a value chain. The efficiency and flexibility of process configuration and optimization within these networks is a core challenge in today's manufacturing industries and influence their supply chain environments. The scientific workshop aims at gathering scientific points of views on complementary challenges for the design and implementation of 'data-based collaborative decision-making' for value networks life-cycle management
Topics of Interest	*Session 1-Data management to support collaboration in value creation network's life-cycles* This special session addresses the two fist challenges of the workshop, thus the integration and management of data, information and Knowledge to support these collaborative life-cycles. *Topics of interest include but are not limited to:* - Data integration and interoperability for value network life-cycle management. - Ecosystems of industrial data marketplace (e.g. architectures, reference processes, certification frameworks and standards) - Data usage control and identity management(e.g. identity management, access control, policy enforcement environment) - Data access service and usage (e.g. automated contracting data access capabilities like secrecy, time to live, anonymization, separation of duties, scope of usage) to support collaboration. - Data analysis to create added-value - Analysis, visualization and knowledge management techniques (e.g. analysis support, preventive vs corrective approaches) *Session 2-Collaborative decision-making for life-cycle management of value creation networks* This special session addresses the third challenge of the workshop, on collaborative decision-making processes and solutions to support life-cycle management. *Topics of interest include but are not limited to:* - Collaborative decision making techniques for value creation (e.g. intelligent/smart mechanisms, machine learning and training)

2. Scientific workshop at PRO-VE 2019: Collaborative Decision-Making for Value creation Networks life-cycle management	
	- Conceptual modelling and configuration methods to manage collaborative decision making (e.g. knowledge models for machine interpretation, machine learning, data models, data policy administration and evaluation) - Collaborative decision-process for value network creation and life-cycle management - Decision-Making to support for value creation in circular economy - Collaborative management and governance structures of value creation networks (e.g. digitized business models, domain models, collaboration models) - Data driven solutions for collaborative industrial networks life-cycle management (e.g. zero-defect manufacturing, additive manufacturing, disruptive business models)
Organizators	▪ Prof. Dimitris Karagianis, Austria ▪ Dr. Mario Lezoche, France ▪ Prof. Xavier Boucher, France ▪ Prof. David Romero, Mexico
Papers	*Session 1-Data management to support collaboration in value creation network's life-cycles* 1. Data Privacy Concerns Throughout the Customer Journey and Different Service Industries. Marko Mäki, Ari Alamäki 2. Data-driven pattern-based constructs definition for the digital transformation modelling of collaborative networked manufacturing enterprises. Concetta Semeraro, Mario Lezoche, Hervé Panetto, Michele Dassisti, Stefano Cafagna 3. Connected and multimodal passenger transport through big data analytics Case Tampere City Region, Finland. Riku Viri, Lili Aunimo, Heli Aramo-Immonen Session *2-Collaborative decision-making for life-cycle management of value creation networks* 4. A Business Model assessment and evaluation framework for city logistics collaborative strategic decision support. Giovanni Zenezini, Jesus Gonzalez-Feliu, Giulio Mangano, Laura Palacios-Arguello. 5. Framework to model PSS collaborative value networks and assess uncertainty of their economic models. Xavier Boucher, Khaled Medini, Camilo Murillo Coba 6. Discrete Event Simulation as a support in the decision making to improve product and process in the automotive industry - A fuel pump component case study. Luis E. Villagomez, Daniel Cortés, José Ramírez, Alejandro Álvarez, Rafael Batres, Ivann Reyes, Germán Esparza, Nancy Cruz, Arturo Molina. 7. Assessment of failures in collaborative Human-Robot assembly workcells. Domenico A. Maisano, Dario Antonelli and Fiorenzo Franceschini

3. PRO-VE 2019: 20th IFIP/SOCOLNET Working Conference on Virtual Enterprises	
Type of event	Scientific working conference
Subject	Collaborative Networks and Digital Transformation
Abstract	The 4th Industrial Revolution and its wide variety of emerging dimensions are characterized both by their required extensive digitalization as well as strong interconnections among their composed systems, products, services, value chains, and business models, among others. The increasing availability of sensors and the smart and mobile devices connected to the Internet, powered by pervasiveness of Cyber-Physical Systems and Internet of Things equipped with distributed computational power and intelligence, have boosted hyper-connected organizations. The focal points of this revolution span over: vertical integration of smart production systems, horizontal integration of organizations through global value chain networks, adoption of through-engineering across the entire value chain, acceleration in manufacturing and service provision, and digitalization of provided products and services, giving rise to new business models that support customer intimacy. Next to Industry 4.0, the same trends increasingly surface in many other areas and sectors, including: Economy 4.0, Health 4.0, Agriculture 4.0, Transportation 4.0, Water 4.0, Tourism 4.0, Logistics 4.0, etc. It is therefore needed to better understand the potential role of collaborative approaches in this context.
Topics of Interest	- Collaborative models, platforms and systems for digital revolution - Manufacturing ecosystem and collaboration in Industry 4.0 - Big data analytics and intelligence - Risk, performance, and uncertainty in collaborative networked systems - Semantic data/service discovery, retrieval, and composition in a collaborative networked world - Trust and sustainability analysis in collaborative networks - Value creation and social impact of collaborative networks to the digital revolution - Technology development platforms supporting collaborative systems - Collaborative manufacturing and factories of the future, e-health and care, food and agribusiness, and crisis/disaster management.
Organizators	▪ Prof. Dario Antonelli, Italy [SOCOLNET member] ▪ Prof. Luis M. Camarinha-Matos, Portugal [SOCOLNET President] ▪ Prof. Hamideh Afsarmanesh, Netherlands [SOCOLNET General Assembly chair]

3. PRO-VE 2019: 20th IFIP/SOCOLNET Working Conference on Virtual Enterprises	
Papers	The conference includes 57 papers, including the ones for the special Workshop organized by DigiFoF and hosted by PRO-VE 2019 (item 2 above): *Session 1-Data management to support collaboration in value creation network's life-cycles* Session *2-Collaborative decision-making for life-cycle management of value creation networks* Proceedings are published by Springer under the title: "Collaborative Networks and Digital Transformation".

4. Scientific session at DoCEIS 2020: Digital twins and smart manufacturing	
Type of event	Session at Conference: DoCEIS 2020 - 11th IFIP WG 5.5/SOCOLNET Advanced Doctoral Conference on Computing, Electrical and Industrial Systems Caparica, Portugal, 1-3 Jul 2020
Subject	Digital twins and smart manufacturing
Topics of Interest	- Cyber-Physical Systems - Digital twins - Industry 4.0 - Digital transformation
Organizers	Luis Camarinha-Matos (SOCOLNET)
Papers	1. *Artem A. Nazarenko and Luis M. Camarinha-Matos*: The Role of Digital Twins in Collaborative Cyber-Physical Systems 2. *Fabio Seixas-Lopes, Jose Ferreira, Carlos Agostinho, and Ricardo Jardim-Goncalves*: Production Process Modelling Architecture to Support Improved Cyber-Physical Production Systems 3. *Bardia Naghshineh and Helena Carvalho*: The Impact of Additive Manufacturing on Supply Chain Resilience 4. *Felipe A. Coda, Diolino J. Santos Filho, Fabr í cio Junqueira, and Paulo E. Miyagi* : Big Data Acquisition Architecture: An Industry 4.0 Approach

5. Scientific session at DoCEIS 2020: Collaborative Networks	
Type of event	Session at Conference: DoCEIS 2020 - 11th IFIP WG 5.5/SOCOLNET Advanced Doctoral Conference on Computing, Electrical and Industrial Systems Caparica, Portugal, 1-3 Jul 2020
Subject	Collaborative Networks
Topics of Interest	- Collaborative enterprise networks - Business ecosystems - Digital transformation
Organizers	Luis Camarinha-Matos (SOCOLNET)

5. Scientific session at DoCEIS 2020: Collaborative Networks	
Papers	1. *Paula Graça and Lu í s M. Camarinha-Matos:* Performance Indicators of a Collaborative Business Ecosystem – A Simulation Study. 2. *Majid Zamiri and Luis M. Camarinha-Matos:* Towards a Reference Model for Mass Collaborative Learning. 3. *Kankam O. Adu-Kankam and Luis M. Camarinha-Matos:* A Framework for Behavioural Change Through Incentivization in a Collaborative Virtual Power Plant Ecosystem .

6. Management challenges (4 December 2019)	
Type of event	Scientific Seminar
Subject	Digital competencies for Factory of Future
Abstract	Presentation of challenges and digital competence gaps of employees in Factories of the Future (FoF)
Topics of Interest	Competency model of employees of Factory of Future Needs and demands of Factory of Future
Organizers	Arkadiusz Jurczuk, Faculty of Engineering Management, Bialystok University of Technology; Scientific Society of Organisations and Management, Bialystok Chapter
Papers	Presentation only

7. 11th International Conference on Engineering, Project, and Production Management (EPPM 2020, 20-22 September 2020) **The EPPM Conference has been postponed and will be held in Krakow from 19-21 September 2021**	
Type of event	International Conference
Subject	Business Process Governance
Abstract	Process governance (PG) refers to an organisation's ability to manage its relationships with all process stakeholders and support the value chain for its customers. Its implementation involves establishing process regulation mechanisms and stakeholder-oriented criteria to support prioritisation, cascading, and change management within BPM initiatives. A review of the domain literature reveals that while process governance has been discussed from several but separated perspectives (strategy, business roles, performance, and maturity), only a few studies identify and synthesise the barriers to its implementation in organisations. The presentation aims to identify and classify the key barriers to the implementation of process governance.
Topics of Interest	Business Process Management, Business Process Governance

7. 11th International Conference on Engineering, Project, and Production Management (EPPM 2020, 20-22 September 2020) **The EPPM Conference has been postponed and will be held in Krakow from 19-21 September 2021**	
Organizers	Faculty of Engineering Management, Bialystok University of Technology Cracow University of Technology, Association of Engineering, Project, and Production Management
Papers	Presentation on-line Jurczuk A., Barriers to implementation of business process governance mechanisms, *Journal of Engineering Management in Production and Services*, vol/ 13(4) 2021, pp. 22-38, DOI: 10.2478/emj-2021-0029

8. 14th Scientific Conference "Multimedia in Business and Administration" **ICT Technologies in Contemporary Management, on-line** on **March 25-26, 2021**	
Type of event	Scientific Conference
Subject	ICT in contemporary management
Abstract	Presentation on-line
Topics of Interest	Innovation, eco-innovation, closed circular economy concept, digitalisation of business
Organizers	Department of Management Information Systems of Częstochowa University of Technology and Scientific Society for Organization and Management in Częstochowa
Papers	Jurczuk A., Competency needs of manufacturing companies determined by technological innovations Presentation on-line in scientific session no. 3 https://www.multimediawbiznesie.pl/indexe.html

9. DigiFoF Project Presentation at NEMO Summer School 2019	
Type of event	Presentation during an Academic Program
Subject	The EU project: DigiFoF
Topics of Interest	Part of the Nemo Summer School was the presentation of the DigiFoF project. During this presentation the need for the DigiFoF project, the idea, the objectives and goals of the project as well as the work packages and the expected results were presented. Programme: https://nemo.omilab.org/nemo/2019/assets/NEMO2019_Program_FINAL.pdf
Organizers	Organizer: Prof. Dimitris Karagiannis, University of Vienna Presenter: Wilfrid Utz, OMiLAB NPO

10. Sibiu Innovation Days (SID 2020)	
Type of event	conference
Subject	Digitalization, Factory of the Future
Topics of Interest	DIGITALIZATION / INDUSTRY 4.0 APPLIED ARTIFICIAL INTELLIGENCE INNOVATIVE PARTNERSHIPS THE FUTURE OF WORK SMART CITY
Organizers	ULBS, Hasso Plattner Institut, ClujIT
Papers	26-27.11.2020 Day 1 - https://www.youtube.com/watch?v=RHS-hHCabH8&feature=emb_title&ab_channel=ULBSibiuTV Day 2 - https://www.youtube.com/watch?v=d0RkCg_Ha3w

11. PROVE 2020 : See Socolnet ???	
Type of event	International IFIP Conference
Subject	Boosting Collaborative networks 4.0
Topics of Interest	Collaborative networks Virtual enterprises Industry 4.0 All application fields of collaborative networks 4.0
Organizers	SOCOLNET
Papers	Full, conference with 60 selected papers

12. PROVE 2021	
Type of event	International IFIP Conference
Subject	Smart and Sustainable Collaborative Networks 4.0
Topics of Interest	Agile and sustainable systems and business models, based on open collaborative processes, are not only an answer to the increasing need for customization but can also provide higher resilience, i.e. joint reconfigurations of market-offers, production processes, and consumption patterns, among others. Digitalization of both products and services enable a transition towards a larger vision of value creation: digitalization strengthens research trends on societal impacts and makes it possible to

12. PROVE 2021	
	progressively focus on more ecological value chains, based on circular and collaborative economy. Combined with the current boom of applied Artificial Intelligence and learning, Collaborative Networks show high potentials to boost Industry 4.0. But digitalization also concerns many other activity sectors where agility, resilience, and sustainability are key challenges, e.g. the Health 4.0, Agriculture 4.0, Cities 4.0, Transportation 4.0, Logistics 4.0, Education 4.0, and even Tourism 4.0. With an eye on this diversity of application fields, PRO-VE 2021 will provide a forum for sharing experiences, discussing trends, and identifying new opportunities, thus introducing innovative solutions for the new generation of Smart and Sustainable Collaborative Networks 4.0.
Organizers	Mines Saint Etienne Scientific Sponsorship : Socolnet & IFIP
Papers	70 papers to be selected.

13. DIGIFOF Special Session at PROVE 2021	
Type of event	DigiFoF Special Session at International Conference
Subject	Knowledge transfer and accelerated innovation in FoF The objective of this session is to gather a set of international papers which highlights both digital FoF platforms and educational efforts and technological solutions for overcoming the Industry 4.0 challenges.
Topics of Interest	-Digital platforms for knowledge transfer on 4.0 technologies: Smart manufacturing, Internet of Things, Cyber Physical Systems, Robotics, Artificial Intelligence -Supporting the deployment of FoF by knowledge transfer digital solutions -Educational challenges and advances in the context of Industry 4.0 -Supporting FoF transition by education and skills enhancement
Organizers	Adrian Florea, Lucian Blaga University of Sibiu Luis M. Camarinha-Matos, SOCOLNET Fabiana Pirola, University of Bergamo Arkadiusz Jurczuk, Bialystok University of Technology
Papers	In progress

14. RCIS 2021	
Type of event	Design Thinking Tutorial at RCIS 2021
Subject	Design Thinking for Digital Innovation: The Scene2Model Case The tutorial will introduce attendees hands-on to the end-to-end process for a software-supported transformation from a haptic Design Thinking prototyping method (SAP Scenes™) to tool-aided conceptual models with the possibility of simultaneous semantic enrichment of design artefacts and automated composition of models into storyboards. Further, the prototypical implementation Scene2Model is introduced as a tool environment for Digital Design Thinking. The outcome of this support environment are conceptual models that can be assessed and shared to embed the collective intelligence of distributed stakeholders in iterative cycles.
Topics of Interest	- Design Thinking - Digital Innovation Environment - Digital Engineering - Conceptual Modelling - Metamodelling - Next Generation Enterprise Modelling.
Organizers	Dimitris Karagiannis (UNIVIE) Wilfrid Utz (OMILAB NPO) Christian Muck (UNIVIE)
Status	Submitted and rejected due to COVID-19 and format restrictions

15. Models 2019	
Type of event	ADOxx Tutorial at Models 2019
Subject	This tutorial introduces the open-source metamodeling platform ADOxx as an experimentation environment for researchers and practitioners to realize individual meta-models and model processing functionalities for domain-specific conceptual modeling methods as modeling tools. Specific emphasis is given to the practical nature of the tutorial: participants are encouraged to realize their individual modeling tools in a hands-on setting and experiment with the capabilities of ADOxx to implement meta-models and model processing functionalities from scratch, specialize existing abstract fragments or compose and integrate available outcomes provided by the ADOxx.org community. The prototypes realized as part of the tutorial are available thereafter for further refinement, assessment and evaluation.
Topics of Interest	- Conceptual Modelling - Metamodelling - Next Generation Enterprise Modelling.
Organizers	Dimitris Karagiannis (UNIVIE) Wilfrid Utz (OMILAB NPO)

15. Models 2019	
Status	Completed on Sunday, September 15, 2019; 1/2 day Event page: https://modelsconf19.org/?page_id=1209#tutorial4 OMILAB Page: https://www.omilab.org/activities/events/models2019/

16. AAAI-MAKE Spring Symbosium	
Type of event	Symbosium on „Combining Machine Learning and Knowledge Engineering“
Subject	AAAI-MAKE 2021 is part of the AAAI Spring Symposium Series, an annual set of meetings run in parallel held at Stanford University, Palo Alto, California, USA. It involves presentations of accepted position, full and short papers, side-tutorial events from industry, (panel) discussions, demonstrations, and plenary sessions to foster interaction and contribution among the participants.
Topics of Interest	- Knowledge Representation - Machine Learning - Artificial Intelligence
Organizers	Knut Hinkelmann (OMILAB NPO, FHNW): co-chair of the event Wilfrid Utz (OMILAB NPO): program committee member
Status	Completed. Event page: https://www.aaai-make.info/cfp/

17. NEMO Days 2021	
Type of event	Lecture series during an Academic Year
Subject	The EU project: DigiFoF and results/achivements
Topics of Interest	The purpose of the NEMO Days is to provide inspirational talks within the academic schedule of HEIs and present a) the DigiFoF project and b) outcomes as achived by individual nodes in a condensed format. The NEMO Days are run virtually to provide students from different academic backgrounds and local settings to participate and collaborate with peers from other universities. NEMO Days are organized by OMILAB NPO and UNIVIE in collaboration with DigiFoF Partners. NEMO Day 1: January 29, 2021 https://www.omilab.org/activities/events/nemoday2021/

17. NEMO Days 2021	
	NEMO Day 2: April 16, 2021 https://www.omilab.org/activities/events/nemoday2021_april/ NEMO Day 3: May 14, 2021 https://www.omilab.org/activities/events/nemoday2021_may/
Organizers	Organizer: Wilfrid Utz, OMiLAB NPO, Iulia Vaidian (UNIVIE) and partners from the DigiFoF consortium

2.2 Dissemination in Scientific Journals

Disseminations in international scientific journals are publications of high scientific value. The details of all these disseminations are presented hereafter.

1. Specifying a modelling language for PSS Engineering – A development method and an operational tool	
Authors	Khaled Medini, Xavier Boucher
Title	Specifying a modelling language for PSS Engineering – A development method and an operational tool
Journal and references	Computers in Industry, Volume 108, June 2019, Pages 89-103
Date	March 2019
DOI	10.1016/j.compind.2019.02.014
Publication status	Published
Web	https://www.sciencedirect.com/science/article/pii/S0166361518306547
Keywords	PSS engineering, conceptual modelling, modelling language, domain specific modelling, model based system engineering
Abstract	Although the literature is full of research works about the transition of the industry towards Product-Service Systems (PSS), the question of how to effectively support PSS engineering is poorly addressed. The compelling need for a decision support throughout the various stages of the engineering process is particularly owed to PSS inherent complexity. In this sense, visualisation and modelling at large have been put forth as promising means for supporting the PSS engineering. This paper proposes a method for specifying a modelling language for PSS engineering, putting together PSS domain specific knowledge and modelling concepts inherited from conceptual modelling and model based engineering. This relies on a recursive transformation process of the underlying PSS meta-model using knowledge from case studies and from literature. The method has proven

1. Specifying a modelling language for PSS Engineering – A development method and an operational tool	
	to be a practical means for a gradual enrichment of the modelling language leading to successful experimentations in industrial context.

2. Engineering Management in Production and Services	
Authors	Arkadiusz Jurczuk
Title	Barriers to implementation of business process governance mechanisms
Journal and references	Engineering Management in Production and Services, Vol. 13(4), 2021, pages 22-38
Date	2021
DOI	10.2478/emj-2021-0029
Publication status	Published
Web	https://www.empas.pb.edu.pl/
Keywords	business process management, process governance, success factors, barriers
Abstract	One of the main challenges in implementing process-oriented management is establishing a governance mechanism in the organisation. It creates a coherent framework for the execution, management and perception of business processes, which is the foundation of consistent Business Process Management (BPM). Process governance (PG) refers to an organisation's ability to manage its relationships with all process stakeholders and support the value chain for its customers. Its implementation involves establishing process regulation mechanisms and stakeholder-oriented criteria to support prioritisation, cascading, and change management within BPM initiatives. A review of the domain literature reveals that while process governance has been discussed from several but separated perspectives (strategy, business roles, performance, and maturity), only a few studies identify and synthesise the barriers to its implementation in organisations. The paper mainly aims to identify and classify the key barriers to the implementation of process governance. The author's approach refers to the six core elements of Business Process Management capability and process governance frameworks. Research results confirm that most process governance barriers polarise around the competence gaps of the process stakeholders and the immaturity of the process-oriented culture of companies. Another significant group of constraints to process governance arises from the existing organisation's structure. They are mainly related to the proper division of responsibilities and a weak position or the lack of BPM centres of excellence. The research contributes to the literature on management by identifying potential barriers to business process governance that constrain BPM initiatives. The identified PG challenges can provide a basis for developing a theoretical framework for Business Process Management and models for BPM success factors.

3. Journal "organization Review"	
Authors	Arkadiusz Jurczuk
Title	The FoF-Designer: Digital Design Skills for Factories of the Future
Journal and references	Przegląd Organizacji, (12), 47-48.
Date	2020
DOI	-
Publication status	Published
Web	https://przegladorganizacji.pl/
Keywords	DigiFoF Design Competence Network, digital competency, OMILAB4FoF
Abstract	-

4. Digital technologies in Product-Service Systems: a literature review and a research agenda	
Authors	Fabiana Pirola, Xavier Boucher, Stephan Wiesner, Giuditta Pezzotta
Title	Digital technologies in Product-Service Systems: a literature review and a research agenda
Journal and references	Computers in Industry 123 (2020) 103301.
Date	2020
DOI	https://doi.org/10.1016/j.compind.2020.103301
Publication status	Published
Web	https://doi.org/10.1016/j.compind.2020.103301
Keywords	Smart Product-Service System; Digital Servitization; Digitalization; Research Topic Modeling; Literature Review
Abstract	Digital technologies are changing the everyday life of citizens and are radically changing the nature of products and services, especially since Industry 4.0 phenomenon has gained popularity all around the world. By analyzing the concept of smart PSS, this paper questions the convergence between digital and service orientations for industrial companies and considers how digital technologies are used to enable decisions along the PSS lifecycle (e.g., design stage, operational stage) and/or at different planning levels (i.e., from strategic to operational level). Thus, this led to the following research questions: 1. Which are the main research streams and to what extent are digital technologies considered in PSS literature? 2. Which are the main areas that are worth to be investigated in future researches?

5. Software Application for Organizational Sustainability Performance Assessment	
Authors	Grecu, V.; Ciobotea, R.-I.-G.; Florea, A.
Title	Software Application for Organizational Sustainability Performance Assessment., 12, 4435.
Journal and references	Sustainability
Date	May 2020
DOI	
Publication status	Published
Web	https://ideas.repec.org/a/gam/jsusta/v12y2020i11p4435-d364730.html
Keywords	sustainability reporting; sustainability assessment; indicators; sustainable organization; business intelligence; decision making
Abstract	Sustainability performance assessment is a challenge for many companies due to the heterogeneity of indicators and the lack of a standardized reporting framework. This paper describes a software solution that simplifies the sustainability reporting process and is useful for decisions concerning sustainable management. We analyzed various indicators from public sustainability reports of five companies and obtained some relevant results using the tool that we developed based on mathematic algorithms and an aggregation model of different indicators. The software application calculates a Global Sustainability Index based on the proposed model of the sustainable organization described in this paper. An optimal solution is very rare in the transition towards the sustainable organization and compromises are required most frequently between environmental, economic and social aspects on the one hand and the expectations of the stakeholders on the other hand. The proposed tool helps users to cope with these challenges and takes into consideration that information is not always available and precise. Another feature offered by the tool is that besides simplifying sustainability performance assessment, it highlights low performance indicators and offers suggestions for improvement based on a genetic algorithm.

6. Innovative Solution for Parking-Sharing of Private Institutions Using Various Occupancy Tracking Methods	
Authors	Adrian Florea, Valentin Fleaca, Simona Daniela Marcu
Title	Innovative Solution for Parking-Sharing of Private Institutions Using Various Occupancy Tracking Methods
Journal and references	Advances in Science, Technology and Engineering Systems Journal Vol. 5, No. 5
Date	12 October 2020
DOI	10.25046/aj050598

6. Innovative Solution for Parking-Sharing of Private Institutions Using Various Occupancy Tracking Methods	
Publication status	published
Web	http://www.astesj.com/publications/ASTESJ_050598.pdf
Keywords	parking sharing, embedded system, web application, smart parking, image processing
Abstract	This work presents an innovative solution for parking-sharing of private institutions based on daily occupancy patterns and using different real time tracking methods of vacant parking slots. The research objective consists in finding the most accurate cars detection method, for determining of vacant parking slots and updating them on application web page. Beside the technical innovation represented by image processing algorithms used, this paper promotes the concept of sharing economy with many social benefits like car flow optimization, reducing fuel, pollution, loss of time and creating financial advantages for parking owners. The main software component is a web application which is connected with Raspberry Pi microcontroller, 2 Pi cameras and one fix camera for parking management. It facilitates reserving a place, opening the barrier and allows entering, exiting and revising the number of vacant slots and synchronization with the web application and the supporting database. The web application provides the following facilities: real time parking status view, reservation on a specific time by license plate number, administration module that includes payment system and updates about users and prices, implementation of the gamification concept in the management of parking spaces. The solution was piloted at Lucian Blaga University of Sibiu (LBUS) Romania. The developed solution is flexible, extensible and applicable to crowded university cities, but also to other private organizations that have inefficiently operated parking slots.

7. Digital technologies for smart PSS	
Authors	X.Boucher, G.Pezzotta, F.Pirola, S.Wiesner
Title	SPECIAL ISSUE : Digital technologies to support lifecycle management of smart product-service solutions
Journal and references	Computers in industry
Date	Submissions till end of April 2021
DOI	
Publication status	Special Issue under reviewing
Web	
Keywords	Smart PSS , Digital Servitization
Abstract	This Special Issue is launched as an extension of the preliminary state of the art ‘Digital technologies in product-service systems: a literature review

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	and a research agenda' already published by Computers in Industry and currently available [1]. This literature review presents the key concepts, scope and issues of this Special Issue more extensively. It emphasizes a large research agenda on Digital Servitization at 3 levels : (i) Engineering challenges to develop, experiment and validate new engineering capabilities for smart PSS, (ii) Managerial issues to support firm's innovation strategies and (iii) Conceptual researches to build a theoretical background of research on Digital Servitization. This special issue is positioned on the first of these three levels: the deployment of the full potential of digitalization to support an integrated design and life cycle management of smart PSS. The potential of digital solutions to support value-creation is addressed in a broad sense: digitalisation is today mature to address distinct issues of PSS deployment, not only the *PSS solution* life cycle traceability, but also the collaborative *PSS delivery network* configuration and management, as well as the *PSS Ecosystem* perception and change management. The interoperability among various key technologies able to support smart PSS (Artificial Intelligence, IoT, Cyber-Physical-Systems, Digital Twin, Cloud Manufacturing, etc…) opens a large avenue to improve lifecycle management of integrated product-service solutions.

8. Design and engineering of smart PSS	
Authors	Camilo Murillo Coba, Xavier Boucher, Damien Lamy, Alexandre Gay, François Vuillaume
Title	Design and engineering of smart PSS: sPS2Risk framework, a prototyping approach to anticipate innovation risks
Journal and references	Journal of Manufacturing Technology Management
Date	Submission March 2021
DOI	
Publication status	Under Review
Web	
Keywords	Smart PSS engineering; Smart PSS value architecture; Smart PSS business model
Abstract	**Purpose** Manufacturing companies are implementing new business models to adapt their offerings to the trends established by Industry 4.0. These new business models, often known as Smart PSS in the scientific literature, are characterized by using Information and Communication Technologies (ICT) to sell a functionality rather than a product's ownership. Due to the Smart PSS concept's novelty, literature in Smart PSS design is still in ongoing development, with no accepted standards so far. This paper aims to present the methods and tools of a value-driven Smart PSS engineering framework.

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	Design/methodology/approach Based on the industrial collaboration with a heating appliance manufacturer, our research protocol is constructivist. The research is based on a deductive case study approach. The results were validated at the theoretical, pragmatic, and feasibility levels. **Findings** This paper presents a framework to design the value creation, value delivery, and value capture processes of a Smart PSS business model. The company staff involved in the case study highlighted the usability of the framework within their operations. **Originality** The framework presented in this paper covers the design of a Smart PSS solution's whole value architecture. This framework is composed of a qualitative modeling phase of the system associated with the Smart PSS solution and a quantitative assessment of the alternative value networks' economic performance.
9. Agile Digital Twins for Smart Product-Service Systems	
Authors	Prof. Robert Buchmann, Prof. Dimitris Karagiannis, Professor; Dr. Wilfrid Utz.
Title	Agile Digital Twins for Smart Product-Service Systems
Journal and references	Computers in Industry Special Issue
Date	2021
DOI	
Publication status	Submitted April 2021, Under review
Web	
Keywords	Smart Product-Service System; Digital twin; Digital Ecosystem; OMILAB
Abstract	OMiLAB is a digital ecosystem that brings together a community and open technologies to investigate or apply conceptual modeling methods for varying purposes and domains. One of its value propositions is a dedicated digital engineering environment comprising several toolkits and workspaces, designed to support Product-Service Systems prototyping – a key ingredient for PSS lifecycle management. At the core of this environment is the notion of Agile Digital Twin – a conceptual representation that can be tailored with knowledge engineering means to bridge the semantic and functional gap between a business view (focusing on value creation) and an engineering view (focusing on cyber-physical proofs-of-concept). Consequently, the proposed environment orchestrates three abstraction layers where methods such as Design Thinking, Agile Modeling Method Engineering and Model-driven Engineering are employed to turn Ideation into smart Product-Service Systems experiments, in a laboratory setting. The proposed environment was built following Design Science principles in order to address the problem of historically-disconnected skills being required for digital innovation projects and to provide a testbed for feasibility

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	experimentation on a higher Technology Readiness Level than what idea development methods typically attain

10. Model-Based Data Integration along the Product & Service Life Cycle supported by Digital Twinning	
Authors	Anna Sumereder, Damiano Falcioni, Robert Woitsch
Title	Model-Based Data Integration along the Product & Service Life Cycle supported by Digital Twinning
Journal and references	Computers in Industry Special Issue
Date	2021
DOI	
Publication status	Submitted April 2021, Under review
Web	
Keywords	Product Service System, Digital Twin,Monitoring, Simulation, Model-Based Approach
Abstract	Currently we observe the mega-trend on digitizationand servitizationusing digital technologies and digital twinsto support digital (business) transfor-mation. In literature, thenew technologies are considered as an enabler forthe creation of additionalvalue, the strengtheningof the customer relationship, and as an accelerator of the servitization process in manufacturingresulting in adap-tations of the product life cycle as well as the business model. Based on the ques-tion how data is integratedalongthe product life cycle, it is discussedhow we can support the product life cycle management as well as the data integration along the product life cycle with digital twinningby focusing on the gap between the product manufacturing and the usage & maintenance. We introduce findings of Change2Twin, where a digital twin is established based on a simplified man-ufacturing scenario, BIMERR, where process simulation is applied in a renova-tion contextincluding the introduction of different abstraction layers, and CAL-IBRaiTE, where reliability indicators are applied for monitoringand decision support.Abstraction, re-use,andsimplificationare supported by following amodel-based approach.A literature research in combination with a motivation case and proof-of-concept implementation experiences within the OMiLAB In-novation Corner are provided. The paper is concluded with aconcisediscussion of the results and an Outlook.

11. Digitization, epistemic proximity, and the education system: insights from a systematic review	
Authors	Ugo Fiore, Adrian Florea, Claudiu Vasile Kifor, Paolo Zanetti

11. Digitization, epistemic proximity, and the education system: insights from a systematic review	
Title	Digitization, epistemic proximity, and the education system: insights from a systematic review
Journal and references	Journal of Risk Financial Management
Date	March 2021
DOI	https://doi.org/10.3390/jrfm14060267
Publication status	published
Web	https://www.mdpi.com/1911-8074/14/6/267
Keywords	problem-solving; university; curriculum; innovation; multidisciplinarity
Abstract	**Advances in IoT, AI, Cyber-Physical Systems, Computational Intelligence, and Big Data Analytics require organizations and workforce to be able and willing to learn how to interact with digital technology. In organizations, coordination and cooperation between actors with expertise in business and technology is fundamental, but integration is hard without understanding the terminology and problems of the interlocutor. Epistemic proximity becomes prominent, underlining the importance of an education focused on flexibility, willingness to cope with the unknown, and interdisciplinarity. The main goal of this work is to provide a perspective on how the education system is evolving to support organizations in the digitization era through a quantitative analysis of literature. More than 170,000 papers were selected from the Scopus database, matching a wide set of keywords related with innovation, problem solving, and organizational change. Patterns in the co-occurrence of keywords were studied. In addition, similarities and differences in the distribution of relevant themes across disciplinary areas, as well as their evolution since 2000, were analyzed. Academic interest is found to be generally increasing over the years in all disciplines, although considerable fluctuations can be observed. This variation is found to be nonuniform in the macroareas.**

2.3 Dissemination in Dedicated Books

DigiFoF Contribution - Volume 2 "Domain-Specific Conceptual Modelling – Concepts, Methods and Tools", Springer

The associated partner UNIVIE has released the first volume of "Domain-Specific Conceptual Modelling – Concepts, Methods and Tools" published by Springer in 2016 and gained positive feedback due to the combination of theoretical aspects, domain-specificity and tool support provided by the authors of the individual chapters. Partners involved in DigiFoF have contributed to volume 1, abstracts are accessible online at https://www.omilab.org/activities/omilab-book-series/volume1/ and chapters can be

retrieved from Springer directly (https://link.springer.com/book/10.1007%2F978-3-319-39417-6).

The production of the second volume of the book is within the project period of DigiFoF and authors from the consortium are contributing with chapters. Currently the book project is in review phase, therefore the information provided below is indicative and subject to change.

Status: In publishing process

Book Abstract (Draft):

This book is the second volume in the "Domain-Specific Conceptual Modelling: Concepts, Methods, and Tools" series, which highlights the work of researchers who have designed and deployed domain-specific modelling methods and tools. It offers detailed instructions on how to build models in a particular domain, such as product-service engineering, enterprise engineering, digital business ecosystems, and enterprise modelling and capability management. Furthermore, it emphasizes possible future developments as well. All this is enriched with case studies, further related information, and tool implementation. The tools are based on the ADOxx metamodelling platform and are provided free of charge via OMiLAB. OMiLAB NPO acts as a facilitator to the development of scientific methods and technologies for all those who value models. The collection of domain-specific modelling methods and tools presented in this volume will benefit experts and practitioners from academia and industry alike, including members of the conceptual modeling community as well as researchers, lecturers, and students.

DigiFoF Contribution to Volume 2 (Invited)

6 DigiFoF Project Partners have been invited to contribute with 7 chapters to the second volume in the OMiLAB Book Series and have developed new conceptual modelling methods and tools within the framework of the Digital Innovation Environment of OMiLAB.

DigiFoF Partner: University of Bergamo

Chapter:
The Service Engineering Methodology-An application in a manufacturing company
Authors:
Dr. Fabiana Pirola; University of Bergamo ; Bergamo/Italy
Dr. Giuditta Pezzotta; University of Bergamo ; Bergamo/Italy
Prof. Dr. Sergio Cavalieri; University of Bergamo ; Bergamo/Italy
(To be confirmed); University of Vienna, Vienna/Austria

DigiFoF Partner: Lucian Blaga University of Sibiu

Chapter:
Conceptualization of Modelling Methods in the Context of Categorical Mechanisms
Authors:
Daniel-Cristian Crăciunean; 'Lucian Blaga' University of Sibiu; Sibiu/Romania
Prof. Dr. Daniel Volovici; 'Lucian Blaga' University of Sibiu; Sibiu/Romania

DigiFoF Partner: University of Vienna

Chapter:

Digitize Tangible Design Thinking Artefacts to Support Information Exchange-The Storyboard based Scene2Model Approach
Authors:
Dipl.-Ing. Christian Muck; University of Vienna; Vienna/Austria
Prof. (FH) Dr. Silke Palkovits-Rauter; University of Applied Sciences Burgenland; Eisenstadt/Austria

Chapter:
Tree Diagrams and Unit Squares 4.0-Digitizing Stochastic Classes with the Didactic Modeling Tool ProVis
Authors:
Mag. Victoria Döller; University of Vienna; Vienna/Austria
ao. Univ.-Prof. Mag. Dr. Stefan Götz; University of Vienna; Vienna/Austria

Chapter:
Model-based Guide towards Digitization in Digital Business Ecosystems
Authors:
Anna Sumereder, MSc.; University of Vienna; Vienna/Austria
Dr. Philos. Tor Dokken; SINTEF Digital; Oslo/Norway

DigiFoF Partner: Bialystok Technical University and OMiLAB NPO

Chapter:
A Digital Innovation Environment for Digital Engineers: How to Apply Conceptual Modelling in Academia and Industry
Authors:
Dr. Arkadiusz Jurczuk, Bialystok Technical University, Poland
Dr. Martin Nemetz, Hilti AG
Iulia Vaidian, MSc., OMiLAB NPO

2.4 Dissemination in Scientific Conferences

Disseminations in scientific conferences are publications in conferences dedicated to the academic community.
The details of all the above mentioned disseminations are presented hereafter.

1. Towards a risk-oriented Smart PSS Engineering framework	
Authors	Camilo Murillo Coba, Xavier Boucher, Jesus Gonzalez-Feliu, François Vuillaume, Alexandre Gay
Title	Towards a risk-oriented Smart PSS Engineering framework
Conference	CMS'2020, 53rd CIRP Conference on Manufacturing Systems
References	
Date	1-3 july 2020
Place	Chicago, USA
Publication status	Future
Web	

1. Towards a risk-oriented Smart PSS Engineering framework	
Keywords	Smart PSS engineering, Risk management for Smart PSS, Smart PSS value network
Abstract	Manufacturers have started exploiting the benefits of Internet-of-things and Artificial intelligence to offer solutions known as "Smart PSS." Recently, smart PSS engineering frameworks have begun appearing. Those frameworks lack guidelines on how to conduct risk management activities throughout the design and development of a smart PSS solution. This paper presents a framework aimed at designing Smart PSS solutions, necessary value networks to deliver the smart PSS solution, and the economic models associated with these value networks. The framework is currently being applied to a case study involving a gas boiler manufacturer.

2. A Smart Innovation Environment for Digital Engineers	
Authors	Dimitris Karagiannis, Robert Andrei Buchmann, Xavier Boucher, Sergio Cavalieri, Adrian Florea, Dimitris Kiritsis
Title	A Smart Innovation Environment for Digital Engineers
Conference	PRO-VE 2020, 21th IFIP Working Conference on Virtual Enterprises
References	Dimitris Karagiannis, Robert Andrei Buchmann, Xavier Boucher, Sergio Cavalieri, Adrian Florea, Dimitris Kiritsis, Moonkun Lee (2020) OMiLAB: A Smart Innovation Environment for Digital Engineers. In: Camarinha-Matos L.M., Afsarmanesh H., Ortiz A. (eds) Boosting Collaborative Networks 4.0. PRO-VE 2020. IFIP Advances in Information and Communication Technology, vol 598. Springer, Cham. https://doi.org/10.1007/978-3-030-62412-5_23
Date	September 2020
Place	Valencia Spain
Publication status	Published and Presented by Prof. Dr. Robert Buchmann
Web	https://www.omilab.org/activities/events/pro-ve2020/
Keywords	Digital Twin, Digital Engineer, Agile Modelling Method Engineering, Cyber-Physical Systems
Abstract	The paper introduces a Smart Innovation Environment for the development of Digital Twins and experimentation related to digital transformation projects, thus consolidating the "Digital Engineer" skill profile (with a business-oriented facet labelled as "Digital Innovator"). In the Internet of Things (IoT) era, this profile implies not only the ability to perform both digital design and engi-neering activities, but also to semantically bridge multiple layers of abstraction, granularity or technical specificity – from high level business analysis down to cyber-physical engineering. In the paper's proposal, conceptual modelling meth-ods and interoperable modelling environments are tailored to enable such inte-

2. A Smart Innovation Environment for Digital Engineers	
	gration through the creation of Digital Twins, as assets or manifestations of dig-ital business models resulting from innovation processes. The architecture of the proposed environment is guided by a Design Research perspective – i.e., we introduce it as a treatment to an education "design problem" regarding the Digital Engineer skill profile during the IoT era. The integrated skillset corresponding to such profiles requires facilitators for Solution Co-creation, Digital Twin development and Agile Engineering of both software ser-vices and cyber-physical systems. The proposed environment encompasses workspaces and resource packages acting as such enablers, currently evaluated in "innovation corners" deployed across the Open Models Laboratory digital eco-system.

3. Value Proposition Prototyping in Smart PSS Engineering: Case Study in Thermotechnology Industry	
Authors	Camilo Murillo Coba, Xavier Boucher, François Vuillaume, Alexandre Gay, Jesus Gonzalez-Feliu
Title	Value Proposition Prototyping in Smart PSS Engineering: Case Study in Thermotechnology Industry
Conference	PRO-VE 2020, 21th IFIP Working Conference on Virtual Enterprises
References	
Date	September 2020
Place	Valencia Spain
Publication status	Future
Web	
Keywords	Smart PSS, PSS design, Value proposition, Risk review
Abstract	This paper proposes a smart PSS engineering approach, aimed at eliciting stakeholder needs, prototyping the value proposition, representing how the stakeholders will capture value and identifying/prioritizing risks from the value proposition. The approach addresses two gaps in the field of smart PSS design: (i) the need of visualization solutions to support the transformation of value propositions for the stakeholders into a contract mechanism supporting value capture by the offering company and (ii) the importance of risk management during the design of Smart PSS value proposition.

4. Reconfigurable Digitalized and Servitized Production Systems: Requirements and Challenges	
Authors	Magdalena Paul, Audrey Cerqueus, Daniel Schneider, Hichem Haddou Benderbal, Xavier Boucher, Damien Lamy, Gunther Reinhart
Title	Reconfigurable Digitalized and Servitized Production Systems: Requirements and Challenges
Conference	APM2020, IFIP International Conference on Advances in Production Management Systems
References	
Date	August 2020
Place	Novi Sad, Serbia
Publication status	Future
Web	
Keywords	Reconfigurability, Digitalization, Servitization, Sustainability
Abstract	Reconfigurable manufacturing systems (RMS) emerged in the literature during the last two decades and aim to answer to the rapid increase of demand and variants of products. The implementation of such solutions in the industry is very recent and remains difficult. In this article, an analysis of the industrial requirements and challenges regarding four key aspects of RMS (reconfigurability, digitalization, servitization and sustainability) is drawn from interviews conducted. Further, the requirements and challenges are compared to those encountered in literature.

5. Simulation-based approach to apply uncertainty evaluation framework for PSS economic models	
Authors	Coba Camilo Murillo, Xavier Boucher, Khaled Medini, and Jesus Gonzalez-Feliu
Title	Simulation-based approach to apply uncertainty evaluation framework for PSS economic models
Conference	11th CIRP Conference on Industrial Product-Service Systems, IPS2 2019
References	Procedia CIRP 83 (2019): 50-56
Date	29-31 May 2019
Place	Zhuhai & Hong Kong, China
Publication status	Published
Web	Available online at www.sciencedirect.com
Keywords	Uncertainty; PSS economic models; PSS simulation; PSS value chains

5. Simulation-based approach to apply uncertainty evaluation framework for PSS economic models	
Abstract	PSS offerings are characterized by a high level of uncertainties due to the lack of information, in the design stage of the offer, about future events that the decision-makers will face. Such uncertainties must be anticipated to validate the profitability of PSS projects. In this paper, an approach to assess uncertainty is presented, then applied to a case study. It is based on the integration of the usual uncertainty management framework together with the quantitative uncertainty assessment approach. The method and implementing tools are presented, together with the application to an industrial case study.

6. Framework to model PSS collaborative value networks and assess uncertainty of their economic models	
Authors	Xavier Boucher, Khaled Medini, Coba Camilo Murillo
Title	Framework to model PSS collaborative value networks and assess uncertainty of their economic models
Conference	PRO-VE 2019, 20th IFIP Working Conference on Virtual Enterprises
References	Springer proceedings, PRO-VE 2019 on Collaborative Networks and Digital Transformation
Date	23-25 September 2019
Place	Turin, Italy
Publication status	Published
Web	https://www.springer.com/
Keywords	Product Service Systems, Value network, Economic models
Abstract	This paper presents a framework for addressing the challenge of economic value sharing among actors of Product-Service value networks. More specifically the framework is dedicated to the assessment of alternative collaborative value networks and their associated economic models, at the time of designing a product-service system (PSS). The framework includes three main components: modelling, simulation and uncertainty assessment. The framework is briefly presented as parts of its components were discussed in previous research. The paper provides an illustration with a design project of a PSS solution in the agro-alimentary industry, requiring a balanced configuration of collaborative value network.

7. Human resources barriers and drivers in SME's digital servitization: French case studies	
Authors	Nadine Dubruc, Sophie Peillon
Title	Human resources barriers and drivers in SME's digital servitization: French case studies
Conference	Spring Servitization conference: Delivering Services Growth in the Digital Era
References	ISBN: 978 1 85449 463 4
Date	13 - 15 May 2019
Place	Linköping, Sweden
Publication status	Published
Web	Available online at https://www.advancedservicesgroup.co.uk/ssc-2019-proceedings
Keywords	Human Resources, Servitization, Digitalization
Abstract	In one hand, Servitization modifies in depth three organizational dimensions: corporate culture, human resource management and organizational structures (Gebauer & al., 2012; Neu & Brown, 2005; Oliva and Kallenberg, 2003). In the six elements defined by Baines and Lightfoot (2013), organizational factors are recognized as a key issue within the servitization process of goods manufacturers. On the other hand, Digitalization is one of the major trends that will change business in future years (Porter and Heppelmann, 2014; Clegg and al, 2017; Zheng and al, 2018). It must be consider also as one important organizational change in SMEs (Parviainen et al. 2017). There is little in-depth research on human resources elements. Porter and Heppelmann (2014), Lerch and Gotsch (2015), Coreynen and al (2017), Suesse et al. (2018) point a lack of qualified employees to develop and provide such services in a digital context. In this paper, we focus on HRM challenges in SMEs, on HRM barriers caused by the necessary modifications to be able to develop services and digitalization. By knowing the Human Resources points that are problems in services, we can suggest some solutions to prevent or to deal with this issue. We observed Human Resources practices by strategic areas: staffing, compensating and motivating (Garand, 1992; Thévenet et al., 2009). “Staffing” covers recruitment, job definition, skills and career management, training… “Compensating” concerns remuneration, pension and retirement. “Motivating” is about work organization, how responding to individual needs and expectations.

8. Improving Training Methods for Industry Workers though AI Assisted Multi-Stage Virtual Reality Simulations	
Authors	Alexandru BUTEAN, Marco Leon OLESCU, Nicolae Adrian TOCU, Adrian FLOREA
Title	Improving Training Methods for Industry Workers though AI Assisted Multi-Stage Virtual Reality Simulations
Conference	The 15th International Scientific Conference, eLearning and Software for Education, Bucharest, April 11-12, 2019
References	DOI: 10.12753/2066-026X-19-007
Date	11-12 April, 2019
Place	Bucharest, Romania
Publication status	Published
Web	Available online at https://search.proquest.com/docview/2213790736/fulltextPDF/DC5901B237BE4431PQ/1?accountid=8083
Keywords	Industry 4.0; Virtual Reality; Training; Artificial Intelligence.
Abstract	For industry workers in the manufacturing space, the most time-consuming and less-productive process is represented by the multitude of training stages. For each new process / module / change in the manufacturing flow, there is a need for another customized training stage. For demanding industries (automotive, toys factories, household appliances, etc.) where customization is the key to sell more products, the time spent for preparing, designing and training people for new scenarios represents an important parameter that influences the production cycle efficiency. The current paper presents a solution to improve the measured performance on a new custom given task added to an existing scenario, using a multi-stage virtual reality (VR) simulator. The simulator acts as a digital twin for a physical testbed that offers 20+ parts to build the end product. To prove the performance of the solution, the first experiment uses a realistic multi-layered toy car as the end product. Both activities (real and virtual) are favoring the exploration of the building process, allowing the user (trainee) to discover multiple solutions that should lead to the same final result. The course of actions is supervised by an adaptive AI algorithm that compares the progress made by previous attempts (successful or not) with the ongoing attempt of a user and offers real-time guidance. Aside from using a gamified lego-like experience, the described approach contributes to the training process by offering personalized contextual suggestions, advices and tips. The article contains a serious state of the art study, current version specifications and objectives, details regarding the architecture of the solution,

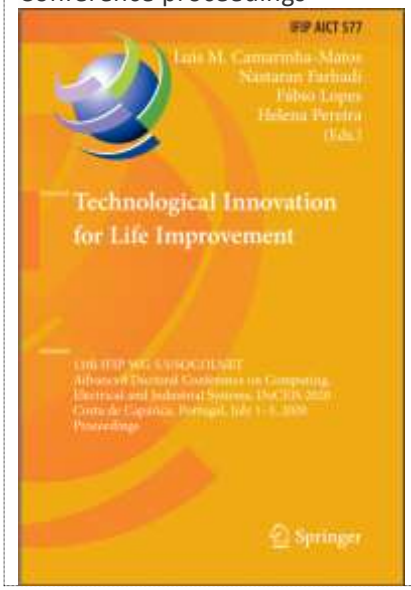
8. Improving Training Methods for Industry Workers though AI Assisted Multi-Stage Virtual Reality Simulations	
	development components, results, comparative experimental tests and conclusions.

9. The Role of Digital Twins in Collaborative Cyber-Physical Systems	
Authors	Artem A. Nazarenko and Luis M. Camarinha-Matos
Title	The Role of Digital Twins in Collaborative Cyber-Physical Systems
Conference	DoCEIS 2020 - 11th IFIP WG 5.5/SOCOLNET Advanced Doctoral Conference on Computing, Electrical and Industrial Systems
References	https://doi.org/10.1007/978-3-030-45124-0_18
Date	1-3 July 2020
Place	Costa de Caparica, Portugal
Publication status	Published
Web	https://link.springer.com/chapter/10.1007/978-3-030-45124-0_18
Keywords	Collaborative cyber-physical systems, Digital Twins, Smart home
Abstract	The growing smartification of devices and systems, combining physical and virtual parts, offers a great potential to improve the daily life of people through the establishment of context-rich environments. Cyber-Physical Systems (CPS), embedding collaborative features, can be considered as one of the key enablers of such environments, providing support for life quality improvement. Besides the general aim of the conventional CPS, further aspects related to co-existence and collaboration among different heterogeneous and autonomous components within a system, are in the scope of Collaborative CPS. These systems allow looking at the technical and organisational challenges from the perspective of interconnected and jointly acting entities. Such entities can be the physical devices or their virtual representations, which are called Digital Twins (DT), understood as digital replicas of physical assets. However, a DT provides more than just a digital simulation of the physical device or process, including reasoning and prediction mechanisms. This work is devoted to the discussion of how Digital Twins can be used in the design, development, and functioning of Collaborative CPS. As such, a design approach is suggested and illustrated with a smart home scenario.

10. Performance Indicators of a Collaborative Business Ecosystem – A Simulation Study	
Authors	Paula Graça, Luis M. Camarinha-Matos
Title	Performance Indicators of a Collaborative Business Ecosystem – A Simulation Study
Conference	DoCEIS 2020 - 11th IFIP WG 5.5/SOCOLNET Advanced Doctoral Conference on Computing, Electrical and Industrial Systems

10. Performance Indicators of a Collaborative Business Ecosystem – A Simulation Study	
References	https://doi.org/10.1007/978-3-030-45124-0_1
Date	1-3 July 2020
Place	Costa de Caparica, Portugal
Publication status	Published
Web	https://link.springer.com/chapter/10.1007/978-3-030-45124-0_1
Keywords	Collaborative Networks, Collaborative Business Ecosystem, Performance indicators, Agent-based modelling, System dynamics
Abstract	Collaborative Business Ecosystems have been benefiting from the technological advancements, allowing better collaboration among organisations to provide more innovative products and services in an increasingly demanding world. This collaboration can be assessed through a set of performance indicators, which also induce a self-adjustment of the organisations' behaviour, improving their profile and that of the ecosystem as a whole. In fact, their behaviour is expected to evolve (like individuals) according to the way they are evaluated. As such, this study presents a simulation model, which, together with the performance assessment and influence mechanism, is an essential contribution to measuring and influencing collaboration, enabling better management decisions. The model is based on agents and system dynamics, featuring a business ecosystem populated by organisations categorised according to a different profile, and configured and calibrated according to actual collaboration data. The samples were collected from two established companies operating in the same business ecosystem in the information technologies industry. Preliminary results of this approach, based on some simulation scenarios, are presented and discussed.

11. Technological Innovation for Life Improvement	
Authors	Luis M. Camarinha-Matos, Nastaran Farhadi, Fábio Lopes, Helena Pereira
Title	Technological Innovation for Life Improvement, **Proceedings of DoCEIS 2020**
Conference	DoCEIS 2020 - 11th IFIP WG 5.5/SOCOLNET Advanced Doctoral Conference on Computing, Electrical and Industrial Systems
References	Springer https://doi.org/10.1007/978-3-030-45124-0
Date	1-3 Jul 2020
Place	Costa de Caparica, Portugal
Publication status	Published
Web	https://link.springer.com/book/10.1007/978-3-030-45124-0
Keywords	Collaborative systems, Decision and optimization systems, Communications systems, Digital twins and smart manufacturing, Energy systems, Biomedical systems, Instrumentation and health

11. Technological Innovation for Life Improvement	
Abstract	Conference proceedings  

12. AN ADOxx BASED ENVIRONMENT FOR PROBLEM BASED LEARNING IN MANUFACTURING SYSTEMS DESIGNS	
Authors	Ion Dan Mironescu
Title	AN ADOxx BASED ENVIRONMENT FOR PROBLEM BASED LEARNING IN MANUFACTURING SYSTEMS DESIGNS
Conference	The 9th International Conference on Manufacturing Science and Education - MSE 2019
References	MATEC Web Conf. 290 14003 (2019), https://doi.org/10.1051/matecconf/201929014003
Date	5-7 June 2019
Place	Sibiu
Publication status	Published
Web	https://www.matec-conferences.org/articles/matecconf/abs/2019/39/matecconf_mse2019_14003/matecconf_mse2019_14003.html
Keywords	Manufacturing, Problem based learning
Abstract	The Problem Based Learning (PBL) as student centred approach and learning-by-doing method is suited for the modern higher education. However, the first contact with the method can be overwhelming for the students, in the absence of prior domain knowledge. The preparation of the learning material can be time and resource consuming for the teacher. The goal of the research was the implementation of an environment that should enhance the learning experience for the student and reduce the implementation burden for the teacher. The environment is based on the ADOxx platform and allows the collaboration of the learner teams and the teacher-learner interaction on three levels. The

12. AN ADOxx BASED ENVIRONMENT FOR PROBLEM BASED LEARNING IN MANUFACTURING SYSTEMS DESIGNS	
	Metamodeling level supports the development of the domain-specific language used in the modelling of the manufacturing system; this activity stimulates and directs the gathering and consolidation of domain-specific knowledge. The modelling level allows the development of alternative design solution using models of the factory components. The Simulation level allows the analysis of these variants. The environment supports the teacher in developing instructional scaffolding and uses cases to ease the learners the first time contact with PBL. The functionality of the environment is presented using the case of designing a flexible food production line.

13. DIGITAL DESIGN SKILLS FOR FACTORIES OF THE FUTURE	
Authors	Adrian Florea
Title	DIGITAL DESIGN SKILLS FOR FACTORIES OF THE FUTURE
Conference	The 9th International Conference on Manufacturing Science and Education - MSE 2019
References	MATEC Web Conf. 290 14002 (2019), https://doi.org/10.1051/matecconf/201929014002
Date	5-7 June 2019
Place	Sibiu
Publication status	Published
Web	https://www.matec-conferences.org/articles/matecconf/abs/2019/39/matecconf_mse2019_14002/matecconf_mse2019_14002.html
Keywords	Smart manufactory, Factory of the Future, Skills
Abstract	Industry 4.0, Smart Manufacturing, Factories of the Future all describe aspects of the heralding era of digitalization of manufacturing aiming to interconnect every step of the manufacturing process and seamlessly integrate the physical and digital world. In Factories of the Future a central computer organizes the intelligent networking of all subsystems, suppliers and customers into one system. All relevant requirements concerning manufacturing and product are confirmed at design time, while execution takes place autonomously as ICT and automation are integrated. The main challenge is represented by educational system, how prepared is to provide students, future employees, the digital competences necessary for the Factories of the Future. What are the structural and curricular measures Higher Education Institutions need to take in order to align engineering education, especially in the design of all constituents of Factories of the Future, with the need of competences in new manufacturing era? A quantitative analysis of existing study programs aims understanding the status quo of Master programs in engineering education and,

13. DIGITAL DESIGN SKILLS FOR FACTORIES OF THE FUTURE	
	deriving from existing policy documents potential requirements for competences design of Factory of the Future employees.

14. MM-DSL, SUPPORT FOR IMPLEMENTING MODELING TOOLS FOR MANUFACTURING PROCESSES	
Authors	Daniel-Cristian Crăciunean, Daniel Volovici
Title	MM-DSL, SUPPORT FOR IMPLEMENTING MODELING TOOLS FOR MANUFACTURING PROCESSES
Conference	The 9th International Conference on Manufacturing Science and Education - MSE 2019
References	MATEC Web Conf. 290 14001 (2019), https://doi.org/10.1051/matecconf/201929014001
Date	5-7 June 2019
Place	Sibiu
Publication status	Published
Web	https://www.matec-conferences.org/articles/matecconf/abs/2019/39/matecconf_mse2019_14001/matecconf_mse2019_14001.html
Keywords	Manufacturing process, Factory of the Future, Modelling tools
Abstract	Today's competitive conditions call for detailed comparative analyzes of manufacturing processes in order to get competitive products. This analysis involves the development of faithful and robust models for the supervision and management of all organizational and operational activities of companies. Efficient modelling involves the selection and use of appropriate tools for modelling, simulation and analysis of manufacturing processes. The diversity of manufacturing processes often makes it necessary to implement specific modelling tools. MM-DSL is a platform independent language for specifying and implementing specific modelling tools. The core objective of the MM-DSL language is the implementation of the modelling method concept. The paper presents the mechanisms underlying the MM-DSL language as well as its use for building the modelling tools specific to the manufacturing systems.

15. *Improving the Training Methods for Designers of Flexible Production Cells in Factories of the Future*	
Authors	Ion Mironescu, Daniel-Cristian Crăciunean, Adrian Florea, Ioan Bondrea

15. *Improving the Training Methods for Designers of Flexible Production Cells in Factories of the Future*	
Title	*Improving the Training Methods for Designers of Flexible Production Cells in Factories of the Future*
Conference	PRO-VE 2020
References	
Date	23-25 November 2020
Place	Valencea, Spain
Publication status	Published
Web	https://www.pro-ve.org/
Keywords	Modeling, Digitalization, Training, Theory of categories, DSML
Abstract	This work proposes a design method for flexible manufacturing systems (FMS). The method reduces the learning curve by helping employees to solve problems related to the design and optimization of the layout, operation and control of FMS, avoiding the drawbacks of current tools. The approach uses Domain Specific Modeling Languages (DSML) for specification of FMS. The paper presents the definition of the DSML and the implementation of the graphical modeling and simulation tool bringing important contributions to development of the domain through the use of constructions from categories theory for DSML specifications. This mathematical basis allows the definition of constraints to avoid supplementary costs and eventual damages through incorrect or incomplete specification of the solutions. By interconnecting with ADOxx of the DSML and tool developed, facilitates access to other analysis and simulation tools like Bee-up, Petri net, better exploration of the design space and extended support for the design activity.

16. *A FORMER « 3.0 PREY'S » CHALLENGE TO BECOME A « 4.0 PREDATOR »: A CASE STUDY ON THE « DIGITAL TWIN-AS-A-SERVICE » MARKET.*	
Authors	SERRA Benjamin
Title	A FORMER « 3.0 PREY'S » CHALLENGE TO BECOME A « 4.0 PREDATOR »: A CASE STUDY ON THE « DIGITAL TWIN-AS-A-SERVICE » MARKET.
Conference	Spring Servitization Conference 2019
References	
Date	May 2019
Place	Linköping, Sweden

16. *A FORMER « 3.0 PREY'S » CHALLENGE TO BECOME A « 4.0 PREDATOR »: A CASE STUDY ON THE « DIGITAL TWIN-AS-A-SERVICE » MARKET.*

Publication status	Published
Web	
Keywords	Servitization, digital Twin
Abstract	At the theoretical scale, this work is based on four main scientific fields. Technological and technical backgrounds on Digital Twin (requirements, device connectivity and interoperability, coding languages…) are provided by researches in the fields of production engineering and informatics/(cloud) computing for industries. Management sciences provide the framework to understand servitization strategies (S. Vandermerwe & J. Rada, 1988; T.S. Baines &al., 2017), methods to design business models coherent with these strategies (A. Osterwalder & Y. Pigneur, 2011) and practices to implement Product-Service Systems offerings (A. Tukker, 2004) in an evolving competitive market (T.S. Baines & al., 2013; M.J. Porter & J.E. Heppelmann, 2014). They also supply the methodological framework to build an intervention research approach with involved partners (A. David, 1999). One of the theoretical goals of that nine months long research project is to gather knowledge created in engineering and computing sciences around concepts as "*Wisdom-as-a-Service*" (J. Chen & al., 2014), "*CPSS*" (S. Wiesner & al., 2017), "*smart PSS*" (A. Valencia & al., 2015; P. Zheng & al., 2018), or business model innovation in a 4.0 industry context (A. Frank & al., 2019), with more general knowledge built around PSS in management sciences. The objective is to anchor the process of knowledge creation in the field of the management sciences. At the empirical level, this work should provide data to characterize the different forms of the business ecosystems allowing to deliver DT value-based services. Multiple forms of partnerships and alliances have been set between actors since 2010 and billions of dollars have been engaged by major actors (particularly automatism and mechatronics global leaders) both in internal and external growth in the field of software development, sensors and actuators technologies, and cloud computing and highperformance computing. Finally, as far as the particle level is concerned, this work attends to provide Solystic a bunch of data and knowledge allowing the firm to design both its future business ecosystem and its value proposal. The main objective is to co-elaborate the extent of possibilities to sell services around their digital twin technology, and to stress the consequences of the different strategic choices regarding to internal and external competences. Another objective is to set a pricing methodology to allow Solystic to establish both a whole Digital Twin-as-a-Service offer and more compartmentalized proposal, like Testing-as-a-Service offerings.

16. *A FORMER « 3.0 PREY'S » CHALLENGE TO BECOME A « 4.0 PREDATOR »: A CASE STUDY ON THE « DIGITAL TWIN-AS-A-SERVICE » MARKET.*	
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17. Barriers to digital servitization	
Authors	S.Peillon, N.Dubruc
Title	Barriers to digital servitization in French manufacturing SMEs.
Conference	PRO-VE 2020
References	
Date	May 2019
Place	Zhuhai & Hong Kong, China
Publication status	Published
Web	
Keywords	Servitization, SME
Abstract	The importance of digitalization is widely recognized, but digital transformation is not commonplace, and companies often struggle to face the challenges it entails. Digitalization and digital transformation are even more challenging for manufacturing SMEs. In this paper, we aim at investigating the barriers to digital servitization faced by manufacturing SMEs. We build on a literature review on barriers and obstacles to digital servitization, and present a set of case studies that enable us to identify the main barriers these French manufacturing SMEs face in their move toward digital servitization. Our findings show that digital servitization is at a very early stage in these SMEs, and that the main barriers they face are both organizational and customer-related.

18. Competency needs of industrial enterprises determined by technological innovations	
Authors	Arkadiusz Jurczuk
Title	Competency needs of industrial enterprises determined by technological innovations
Conference	14th Scientific Conference "Multimedia in Business and Administration" ICT Technologies in Contemporary Management.
References	-
Date	26 March 2021

18. Competency needs of industrial enterprises determined by technological innovations	
Place	On-line
Publication status	Presented on-line
Web	https://multimediawbiznesie.pl/indexe.html
Keywords	competency model, digital skills
Abstract	The presentation aimed to identify competence gaps in the use of advanced methods and tools to support development of Factory of the Future.

19. Industrial Digital Environments in Action:The OMiLAB Innovation Corner	
Authors	Robert Woitsch
Title	Industrial Digital Environments in Action:The OMiLAB Innovation Corner
Conference	PoEM 2020: Riga, Latvia, November 25-27
References	Woitsch R. (2020) Industrial Digital Environments in Action: The OMiLAB Innovation Corner. In: Grabis J., Bork D. (eds) The Practice of Enterprise Modeling. PoEM 2020. Lecture Notes in Business Information Processing, vol 400. Springer, Cham. https://doi.org/10.1007/978-3-030-63479-7_2
Date	Presentation: Friday, November 27, 2020; Event dates: November 25-27, 2020
Place	Riga, Latvia
Publication status	Published
Web	https://poem2020.rtu.lv/
Keywords	OMiLAB, Digital transformation, Digital innovation in industry
Abstract	The digital transformation is a global mega trend that is triggered by the evolution of digital technology, that has the potential for every organisation to either optimize their current business via a digital innovation or by transforming the business via digital disruption. The challenge for every organisation is therefore to select and personalise the appropriate digital innovation. There is a plethora of methods and assessment frameworks, here we introduce the OMiLAB Innovation Corner that assists in (1) creating new business, (2) design the organisational model and (3) engineer proof-of-concept prototypes as a “communication media”. The unique value proposition of OMiLAB Innovation Corner is the model-based foundation that supports decision makers in key phases of the innovation. First, the creation of new business models by providing digital design thinking tools is assisted. Second, the design of the digital organisation by providing

19. Industrial Digital Environments in Action:The OMiLAB Innovation Corner	
	extended modelling capabilities is supported. Third, a proof-of-concept engineering providing robots and sensors is enabled. We share our practical exeriences by introducing (a) how new business models are created in the H2020 project Change2Twin to help manufacturing SMEs in their digital transformation, (b) how conceptual models are design in the H2020 project BIMERR to create digital twins of renovation processes and (d) how proof-of-concept engineering is performed in the FFG project complAI to analyse different robotic behaviour.

20. Collaborative Model-Based Process Assessment for trustworthy AI in Robotic Platforms	
Authors	Robert Woitsch, Wilfrid Utz, Anna Sumereder, Bernhard Dieber, Benjamin Breiling, Laura Crompton, Karin Bruckmüller, Stefan Schumann
Title	Industrial Digital Environments in Action:The OMiLAB Innovation Corner
Conference	PoEM 2020: Riga, Latvia, November 25-27
References	Not yet available
Date	Virtual forum - 22nd to 24th June 2021
Place	Virtual
Publication status	Submitted, under review
Web	https://www.conference-society5.org/
Keywords	Robotic, Artificial Intelligence, Model-based Approaches
Abstract	The use of robots in combination with artificial intelligence (AI) is a current trend with the promises to relieve humans from difficult-, time consuming- or danger-ous work. Intelligent robots aim to solve tasks more efficiently, safer or partly more stable. Independent of the domain-specific challenge, the configuration of both (a) the robot and (b) the AI currently requires expert knowledge in robot implementation, security and safety regulations, legal and ethical assessments and expertise in AI. In order to enable a co-creation of domain-specific solutions for robots with AI, we performed a laboratory survey – consisting of stakeholder in-teraction, literature research, proof-of-concept experiments using OMiLAB and prototypes using a Robot Laboratory – to elicit requirements for an assistant sys-tem that (i) simplifies and abstracts robot interaction, (ii) enables the co-creative assessment and approval of the robot configuration using AI, and (iii) ensures a reliable execution. A model-based approach has been elaborated in the national funded project complAI that

20. Collaborative Model-Based Process Assessment for trustworthy AI in Robotic Platforms	
	demonstrates the key components of such an assis-tance system. The main concepts paving the way for a shift from research and in-novation into real-world applications are discussed as an outlook.

21. BEDe: A Modelling Method for Iterative Business Ecosystems Design	
Authors	Maria-Sophie Schoder, Wilfrid Utz
Title	BEDe: An Modelling Method for Iterative Business Ecosystems Design
Conference	PRO-VE 2021 (22nd Working Conference on Virtual Enterprises), Special session organized by DigiFoF
References	Not yet available
Date	November 22 -24, 2021
Place	St. Etienne, France
Publication status	Submitted, under review
Web	https://pro-ve-2021.sciencesconf.org/
Keywords	Business Ecosystem, Business Strategy, Conceptual Modelling, Metamodelling, Modelling Method Engineering
Abstract	In this contribution we explore a design technique for business ecosystem applying conceptual modelling techniques as a means to conceptualize such environment and provide capabilities to explore and analyze its outcomes in a comprehensive manner. The motivation for this work is attributed to the need of methods in the field that support design, collaboration and evaluation/evolution phases of business ecosystems. The requirements are derived from a review of literature and case studies, input for a conceptual analysis. As an outcome we propose a modelling method and prototype that provides a formal representation of the concepts identified, interaction and sharing capabilities of models and enables domain-specific extension capabilities realized through metamodeling.

22. Successful Knowledge Transfer – A Boost for Regional Innovation	
Authors	**Adrian Florea and Christoph Meinel**
Title	**Successful Knowledge Transfer – A Boost for Regional Innovation**
Conference	**PRO-VE 2021, Smart and Sustainable Collaborative Network 4.0,**
References	**https://doi.org/10.1007/978-3-030-85969-5_5**
Date	22-24 November 2021

22. Successful Knowledge Transfer – A Boost for Regional Innovation	
Place	Saint-Etienne, France
Publication status	published
Web	**https://link.springer.com/chapter/10.1007/978-3-030-85969-5_50**
Keywords	**Innovation Knowledge transfer Digital education platform**
Abstract	**Innovation is the only way the EU can maintain a strong, sustainable and competitive economy. However, at present there are large imbalances between degrees of innovation of EU countries. Statistics of 2018 and 2019 classify Romania as the least innovative country of EU. One solution to mitigate this drawback consists of development of collaborative networks that replicate the best models of innovation from advanced countries and adapt them to underdeveloped countries from Europe. Such a collaborative network was proposed by HPI Potsdam in 2018 to ULBS with the aim to create an active knowledge transfer center between academia and business/society in the Sibiu region. This paper describes how the center contributes to increasing competitiveness in the Sibiu region by creating collaborative networks, digital education and training platforms as well as fostering applied research projects building on HPI's experience in Potsdam, Germany.**

3 Project White Papers

The project's partners will collaborately produce one White Paper. The details of this paper is presented here.

12. Design Methodology and Tools in Factory of the Future	
Authors	FLOREA Adrian, MIRONESCU Ion, CRĂCIUNEAN Daniel, MORARIU Daniel, VOLOVICI Daniel
Title	Design Methodology and Tools in Factory of the Future
Journal and references	International Journal of Advanced Statistics and IT&C for Economics and Life Sciences ,
Date	June 2021
DOI	DOI: 10.2478/ijasitels-2021-0001
Publication status	published
Web	https://magazines.ulbsibiu.ro/ijasitels/index.php/IJASITELS/article/view/53
Keywords	ADOxx modelling, Factory of the Future, Internet of Things
Abstract	**This paper presents a design method and tool developed to support the skill forming activities in the DigiFoF network (https://www.digifof.eu/).**

12. Design Methodology and Tools in Factory of the Future	
	The focus is on training of manufacturing system design skills both as HEI education and vocational training, but preliminary design of new manufacturing systems is also supported (e.g in the development of small business process scenarios). **We proposed a model-based methodology for solving of the manufacturing system design problems The methodology and the supporting tool are centred around a less abstract Domain-Specific Modelling Language (DSML). The language is easy to learn due to its few components.** **A modelling and simulation environment named Digital Production Planner Tool (DPPT) was generated from the metamodel of the DSML. The degree of abstraction used by this tool corresponds well to the intended use in training and preliminary design.** **Our method incorporates by design the possibility to impose constraints at the modelling language level to limit the modelling space to feasible/possible solutions. The resulting tool enforces these constraints in the use and supports the development of feasible designs even by inexperienced designers.** **The access to the conceptual model allows the translation of the model to other modelling language like Petri net. This extends the support for the design methodology.** **The whitepaper presents a use case for the developed method and tool: the design of a chocolate manufacturing line.**

4 Press and Network Dissemination

Press and network disseminations are the Project representation in less oficial formats such as web pages, catalogues or flyers. A general list of these kind of disseminations per country are presented here and later in each sub-sections more details are provided.

Partner	Press and network dissemination
Austria	1. Presentation at OMILAB Day on September 25, 2020 (reported in Germany section as organized jointly with OMiLAB NPO) 2. IT Academy 2020
France	1. Project DigiFoF: Expertise of Mines Saint-Etienne at service in FoF 2. IMT TEch - Servicisation of products : towards a value creating economy 3. IMT TEch - Servicisation des produits : vers une économie créatrice de valeur 4. Projet DigiFoF : Dissemination DigiFoF French webinaire 1 par CIRIDD (2020 5. Projet DigiFoF : first dissemination of DigiFoF information by CIRIDD (2019) 6. DigiFoF case studies and circular Economy (international version) 7. DigiFoF case studies and circular Economy (French version) 8. Digital transformation and circular economy: complementary levers to innovate 9. Projet DigiFoF : diffusion DigiFoF French webinaire 2 par CIRIDD (2020) 10. Projet DigiFoF : Webpage on CIMES's website

Partner	Press and network dissemination
	11. Projet DigiFoF : LinkedIn posts
Germany	3. Regionale Anwedertreffen der BOC 2020 4. DigiFoF Details project, accessible for the general public, and specifically the supported community: https://www.omilab.org/activities/digifof.html 5. OMILAB Day on September 25, 2020 6. 3 NEMO Days (open to public, reported as scientific event) 7. Proposal: OMILAB@Olympics (Swiss village) in Tokyo 2021
Italy	1. Projet DigiFoF : Skills needed to design the factory of the future 2. Formazione Innovativa per la trasformazione: Il contributo del Cluster AFIL a supporto della specializzazione Regionale 3. Project DigiFoF – Webpage in the AFIL website 4. Project DigiFoF – Webpage in the AFIL website 5. Project DigiFoF – LinkedIn News (AFIL) 6. Project DigiFoF – LinkedIn News (UNIBG)
Poland	1. Digital Design Skills for Factories of the Future – Web Media 2. Project DigiFoF- Poster dissemination 3. Regional competition, Podlaska Brand (category: Project 4.0) 4. Kurier Poranny 5. Regional media: Podlaski Manager, April 2020, p. 16-17 6. ErasmusDays, Bialystok University of Technology, 14-16.10.2021 7. Podlaskie Province Information Portal (on-line), 2021 8. Bialystok information portal – regional media (https://www.bstok.pl, on-line), 2021 9. Bialystok information portal (Portal DzienDobryBiałystok.pl, on-line), 2021
Portugal	1. DIGIFOF - short summary 2. DIGIFOF : THE FOF DESIGNER: DIGITAL DESIGN SKILLS FOR FACTORIES OF THE FUTURE 3. Factory of the Future Education
Romania	1. “15 universities and companies from abroad help students develop new skills”, Tribuna Sibiului Newspaper 2. Sibiu Innovation Days 2020 (SID 2020) 3. Web training material promote: Artificial Intelligence for Facial and Emotion Recognition 4. **Web training material promote: Artificial Smart City Modelling** 5. **Web training material promote: Artificial Introduction to Flexible Manufacturing Systems** 6. **Info Session for Conti Students:** 7. **Sibiu Innovation Days 2020 (SID 2020)** -LinkedIn 8. **Sibiu Innovation Days (SID 2020) -**Twitter - Director Irene Norstedt - 9. An official website of the European Union - 10. Digital Inovation Hub for Society - https://dih4society.ro/events-2020/ 11. Press “Stirile transilvaniei” - Press “Turnul Sfatului” – 12. **Sibiu Innovation Days 2020 (SID 2021)** -LinkedIn

4.1 Press & network dissemination in Austria

Presentation and Workshop at IT Academy 2020	
Authors	Dimitris Karagiannis
Title	Designing an Intelligent Enterprise: Practice Session/Workshop
Dissemination support	Virtual event
Target group	Industrial participants
Date	September 8, 2020
Web	**http://itacademy.ch/**
Abstract	*Objectives (What you will learn)* + Principles, architecture and environment observations + Industrial and academic perspectives on digital transformation vs. optimization + Design thinking as a collaborative effort towards digital transformation *Benefits (For you and your company)* + Practice design thinking techniques + Collaborate within a distributed, heterogenous team and develop jointly an innovative idea + Understand how innovation actions impacts your processes and enterprise architecture

Presentation at OMILAB DAY 2020	
Authors	Dimitris Karagiannis
Title	Innovation through Digitalisation, Intelligent Enterprise
Dissemination support	Hybrid event, promoted via social media
Target group	Industrial and academic partners
Date	September 25, 2020; 09:30 - 13:30
Web	**https://www.omilab.org/activities/events/omilabday2020/**
Abstract	The fast-paced evolution of technologies and availability of efficient hardware and software components has been driving the digitalisation of physical objects in recent years. Enterprises need to reflect strategically on these changing circumstances to stay competitive and transparently develop and adapt their roadmap for digital transformation to support innovation processes. This observation motivates this talk, introducing the Open Models Laboratory (OMiLAB – www.omilab.org) as an open digital ecosystem designed to support the design of novel business ideas, the decomposition into conceptual models enabling model-value functionality and feasibility assessments as experiments for assessment.

4.2 Press & network dissemination in France

Disseminations in France will be represented in two different forms. The first one is a web dissemination and the second one is in the form of the project flyers.

1-Projet DigiFoF : Mines Saint-Étienne's expertise at the service of the industry of the future	
Authors	Mines Saint Etienne
Title	Projet DigiFoF : l'expertise de Mines Saint-Étienne au service de l'industrie du futur
Dissemination support	Web and social media, Facebook, Twitter, External dissemination network of mines Saint Etienne
Target group	Industrial and academic partners
Date	May 2019
Web	https://www.mines-stetienne.fr/Projet_DiGiFoF
Abstract	Article explaining the objectives, structuration, key partners and key actions developed during DIOGIFoF Project.

2-IMT TEch - Servicisation of products : towards a value creating economy	
Authors	Mines Saint Etienne
Title	Servicisation of products : towards a value creating economy Servicisation des produits : vers une économie créatrice de valeur
Dissemination support	IMT Tech (international IMT New letter), Web and social media, Facebook, Twitter, External dissemination network of mines Saint Etienne
Target group	Industrial and academic partners
Date	September 2019
Web	https://blogrecherche.wp.imt.fr/en/2019/11/15/servitization-of-products-towards-a-value-creating-economy/
Abstract	Article explaining the economic impact of developing industrial business models based on servitization.

3-IMT TEch - Servicisation des produits : vers une économie créatrice de valeur	
Authors	Mines Saint Etienne
Title	Servicisation des produits : vers une économie créatrice de valeur
Dissemination support	IMT Tech (international IMT New letter), Web and social media, Facebook, Twitter, External dissemination network of mines Saint Etienne
Target group	Industrial and academic partners
Date	September 2019

3-IMT TEch - Servicisation des produits : vers une économie créatrice de valeur	
Web	https://imtech.wp.imt.fr/2019/09/24/servicisation-des-produits-vers-une-economie-creatrice-de-valeur/
Abstract	Article explaining the economic impact of developing industrial business models based on servitization.

4-Projet DigiFoF : first dissemination of DigiFoF information by CIRIDD (2019)	
Authors	CIRIDD
Title	Announcement of DIGIFoF project
Dissemination support	Web Media, International dissemination platform dedicated to circular Economy
Target group	Open : socio-economic actors including companies, innovation actors, administrations, expertise centers
Date	May 2019
Web	https://www.eclaira.org/articles/#page1
Abstract	Partnership and objectives of DigiFoF Project

5-Projet DigiFoF : Dissemination DigiFoF French webinaire 1 par CIRIDD (2020)	
Authors	CIRIDD
Title	Industrie du futur : comment associer la personnalisation de masse et l'agilité des systèmes de production ?
Dissemination support	Web Media, International dissemination platform dedicated to circular Economy
Target group	Open : socio-economic actors including companies, innovation actors, administrations, expertise centers
Date	Juin 2020 + September 2020
Web	https://www.economiecirculaire.org/articles/e/webinaire-economie-circulaire-et-industrie-du-futur.html
Abstract	Announcement and dissemination of DigifoF Webinare on the following topic : **Industry 4.0 - towards the integration of mass customization and agile production systems.**

6-DigiFoF case studies and circular Economy (international version)	
Authors	CIRIDD
Title	Dissemination of English DIGIFoF Case Studies on an international information platform
Dissemination support	Web Media, International dissemination platform dedicated to circular Economy
Target group	Open : socio-economic actors including companies, innovation actors, administrations, expertise centers
Date	Period of web dissemination : 21/03/2021 au 15/09/2021

6-DigiFoF case studies and circular Economy (international version)	
Web	www.circulareconomy.org https://www.economiecirculaire.org/member/5739/
Abstract	List of DigiFoF case study concerned : • Complete revamping of materials and product handling systems along the assembly line. • Systems for the complete traceability of assembled components and a guided pipeline in assembly operations. • Implementation of a real time monitoring system of machine performance. • Conceptual case: batteries as a service. • Automation of production processes for individual (retail) orders and specification. • Sensor based maintenance of HVAC equipment. • TIPCO – Intelligent traceability for complex products. • HALL 32 – New approach of the vocational trainings aiming at creating a program of excellence to train people for the industrial jobs. • E-SPINDLE – From e-spindle and e-machining projects to servitization. • USITRONIC – Self-adapting production island. • A performing service system for the wood industry. • Shaping light to gain new markets. • Improving performance thanks to the economy of functionality. • Implementing a “Remote Assistance” service package. • Implementing a CRM – upside, resistance and opportunities. • Cobots, as human worker replacement, represents the new challenge for industrial companies. In order to install this type of equipment, automation and programming skills are needed for engineers. • AGV for modern Logistics in industrial companies. • The final customer satisfaction of information transmission. • Integrated design of a product service system and the associated economic model. • Optimization of the orders flow process through solutions of the digital workflow of details and interactive warehouses in an additive manufacturing environment. • Change of paradigm within the Company, manufacture automotive components in conditions of an Industry 4.0 and in condition of a greener and sustainable economy.

7-DigiFoF case studies and circular Economy (French version)	
Authors	CIRIDD
Title	CIRIDD
Dissemination support	Dissemination of English DIGIFoF Case Studies on a FRENCH information platform
Target group	Web Media, French dissemination platform dedicated to circular Economy
Date	Open : socio-economic actors including companies, innovation actors, administrations, expertise centers
Web	Period of web dissemination : 03/05/2021 - 30/09/2021
Abstract	https://www.economiecirculaire.org/
	List of DigiFoF case study concerned :

7-DigiFoF case studies and circular Economy (French version)	
	• Complete revamping of materials and product handling systems along the assembly line. • Systems for the complete traceability of assembled components and a guided pipeline in assembly operations. • Implementation of a real time monitoring system of machine performance. • Conceptual case: batteries as a service. • Automation of production processes for individual (retail) orders and specification. • Sensor based maintenance of HVAC equipment. • TIPCO – Intelligent traceability for complex products. • HALL 32 – New approach of the vocational trainings aiming at creating a program of excellence to train people for the industrial jobs. • E-SPINDLE – From e-spindle and e-machining projects to servitization. • USITRONIC – Self-adapting production island. • A performing service system for the wood industry. • Shaping light to gain new markets. • Improving performance thanks to the economy of functionality. • Implementing a “Remote Assistance” service package. • Implementing a CRM – upside, resistance and opportunities. • Cobots, as human worker replacement, represents the new challenge for industrial companies. In order to install this type of equipment, automation and programming skills are needed for engineers. • AGV for modern Logistics in industrial companies. • The final customer satisfaction of information transmission. • Integrated design of a product service system and the associated economic model. • Optimization of the orders flow process through solutions of the digital workflow of details and interactive warehouses in an additive manufacturing environment. • Change of paradigm within the Company, manufacture automotive components in conditions of an Industry 4.0 and in condition of a greener and sustainable economy.

8-Digital transformation and circular economy: complementary levers to innovate	
Authors	Mines Saint Etienne
Title	Transformation numérique et économie circulaire: des leviers complémentaires pour innover
Dissemination support	Academic and Industrial Workshop on innovation Dissemination of 100 DigiFoF Flyer (paper prints) on the occasion of a dissemination workshop
Target group	Industrial and socio-economics network
Date	22 May 2019
Web	https://www.mines-stetienne.fr/recherche/5-centres-de-formation-et-de-recherche/institut-henri-fayol/actualites/journee-defii-de-linstitut-henri-fayol-2019/
Abstract	Networking and dissemination workshop dedicated to the digital transformation of the industry

8-Digital transformation and circular economy: complementary levers to innovate	

9-Projet DigiFoF : Dissemination DigiFoF French webinaire 2 par CIRIDD (2020)	
Authors	CIRIDD
Title	DigiFoF webinar 9 - Circular economy
Dissemination support	Youtube and Eclaira website
Target group	General public
Date	02/12/2020
Web	https://www.eclaira.org/library/h/digifof-webinar-9-circular-economy.html
Abstract	This video was developed as part of the EU project Digital Design Skills for Factories of the Future (DigiFoF). The project proposes a network of training environments where HEIs, enterprises and training insitutions come together to develop skill profiles, training concepts as well as materials for design aspects of the Factory of the Future (FoF). It will create an organizational structure to foster knowledge transfer between industry and academia, aiming to provide educational and experimental OMiLAB4FoF laboratories, where FoF-aspects can be taught practically or experimented with. These will be equipped with modelling, simulation and analysis tools targeting: strategic aspects of FoF (innovative business models, product-service systems, design thinking, crowd-production), process aspects (business process management, enterprise architecture management, product-lifecycle-management) and systems aspects (digital factory, product design, CPS and embedded intelligence, security and safety management).

9-Projet DigiFoF : Dissemination DigiFoF French webinaire 3 par CIRIDD (2021)	
Authors	CIRIDD
Title	Replay - Multidimensional impacts of Service oriented strategies and Functional Economy
Dissemination support	Youtube and Circulareconomy.org
Target group	Industrial and companies
Date	09/30/2021
Web	https://www.economiecirculaire.org/articles/h/replya-multidimensional-impacts-of-service-oriented-strategies-and-functional-economy.html https://www.economiecirculaire.org/articles/h/replay-les-effets-utiles-et-la-mesure-d-impact-de-l-economie-de-la-fonctionnalite-et-de-la-servicisation.html https://www.linkedin.com/posts/amandine-ameline_webinar-multidimensional-impacts-of-service-activity-6847163336962908160-5EG0

9-Projet DigiFoF : Dissemination DigiFoF French webinaire 3 par CIRIDD (2021)	
Abstract	On September the 30th, DigiFoF members have hosted a webinar about multidimensional impacts of service oriented strategies and functional economy, you can access the replay below. This 1-hour webinar tackles the following subjects: - Indicators and measures of useful effects generated by functional economy - Internal effects of functional economy upon work organisation - External effects of this transition applied within a company

10-Projet DigiFoF : Webpage on CIMES's website	
Authors	CIMES
Title	Webpage
Dissemination support	Webpage on CIMES's website
Target group	General public
Date	
Web	https://www.cimes-hub.com/europe/projets-europeens/digifof
Abstract	Key information on the objectives, partners, budget…

11-Projet DigiFoF : LinkedIn posts	
Authors	CIMES
Title	LinkedIn posts
Dissemination support	Posts on CIMES's LinkedIn account
Target group	General public and industrial ecosystem
Date	September 2019, 24.06.2020, 15.10.2020, 22.02.2021
Web	https://www.linkedin.com/posts/viam%C3%A9ca_cimes-digifof-erasmusplus-activity-6585126790178582529-FarB https://www.linkedin.com/feed/update/urn:li:activity:6681510203206250497 https://www.linkedin.com/feed/update/urn:li:activity:6722503995442679808 https://www.linkedin.com/feed/update/urn:li:activity:6769529160646885377
Abstract	Information on project's activities

4.3 Press & network dissemination in Germany

1-Regionale Anwedertreffen der BOC 2020	
Authors	OMILAB NPO
Title	Regionale Anwendertreffen 2020 (5x : 1 presence, 4 virtual)
Dissemination support	Dissemination of localized DigiFoF Flyer (paper prints) during the event, introduction of DigiFoF during the virtual meetings. Presentation slot during the event
Target group	Industrial users
Date	5.3.2020, 18.03.2020, 01.04.2020, 29.04.2020, 13.05.2020
Web	https://de.boc-group.com/nc/events/event/article/regionales-anwendertreffen-der-boc-in-muenchen/
Abstract	BOC Innovation Lab: Design Thinking Workshop powered by OMiLAB

2-DigiFoF Project	
Authors	OMILAB NPO
Title	DigiFoF: Digital Design Skills for Factories of the Future
Dissemination support	Web page
Target group	Industrial, academic partners and community members
Date	May 2019
Web	https://www.omilab.org/activities/digifof.html
Abstract	Project summary and interaction channel for interested parties.
3-DigiFoF Project Website at www.omilab.org	
Authors	OMILAB NPO
Title	DigiFoF: Digital Design Skills for Factories of the Future
Dissemination support	Web page
Target group	Industrial, academic partners and community members
Date	May 2019
Web	https://www.omilab.org/activities/digifof.html
Abstract	Project summary and interaction channel for interested parties.

4-OMILAB Day September 2020	
Authors	OMILAB NPO
Title	OMiLAB Day 2020
Dissemination support	Hybrid event (on-site and virtual), presentation of OMiLAB nodes in conjunction with DigiFoF project and beyond
Target group	Industrial, academic partners and community members
Date	September 25, 2020

4-OMILAB Day September 2020	
Web	https://www.omilab.org/activities/events/omilabday2020/
Abstract	Following the series of OMILAB Days during the NEMO Summerschool, the OMILAB Day 2020 provides participants with insights on results achieved and planned development within the context of the OMILAB network. Innovative results in the context of research initiatives and projects are presented and discussed. The OMILAB Day is considered a forum of exchange between nodes, interested stakeholders, developers and users to discuss ideas on modelling approaches and how they support novel business models, provide means for evaluation and assessment and enable creativity.

5-OMILAB at Olympics (Swiss Village)	
Authors	OMILAB NPO
Title	OMILAB at Olympics
Dissemination support	Physical event, potentially held virtually
Target group	Industrial, academic partners and community members
Date	Not available yet
Web	https://www.linkedin.com/posts/emanuelelaurenzi_impactlabfhnw-omilab-staytuned-activity-6775709715314835456-EMmY/
Abstract	Dissemination activity planned for the Tokyo 2021 olympics, co-organized with FHNW (OMILAB@FHNW).

4.4 Press & network dissemination in Italy

Press Dissemination

1-Projet DigiFoF : Skills needed to design the factory of the future	
Authors	Fabiana Pirola, Andrea Mazzoleni, Giuditta Pezzotta
Title	Le Competenze per la Progettazione della Fabbrica del Futuro
Dissemination support	Italian journal Sistemi&Impresa
Target group	Companies, researchers
Date	May 2020
Web	
Abstract	This article provides some indications aimed at providing a greater understanding of the issues concerning the transition of companies

1-Projet DigiFoF : Skills needed to design the factory of the future	
	towards the Factory of the Future paradigm, with particular attention to the issues concerning the new skills that are increasingly necessary to better manage and design the introduction of advanced production technologies. The results, based on a survey conducted within the Erasmus + KA2 DigiFoF project - The FOF-designer: Digital design skills for factories of the future - on a sample of 87 companies among them belonging to 6 European countries, suggest that the need for skills, both in terms of updating existing skills and generating new skills, represents one of the key aspects to be considered when designing a FoF.

2-Formazione Innovativa per la trasformazione: Il contributo del Cluster AFIL a supporto della specializzazione Regionale	
Authors	Andrea Mazzoleni, Giacomo Copani, Marzia Morgantini, Roberta Curiazzi
Title	Formazione Innovativa per la trasformazione: Il contributo del Cluster AFIL a supporto della specializzazione Regionale
Dissemination support	Italian Journal Meccanica & Automazione
Target group	Companies, Researchers
Date	November 2020
Web	http://www.meccanica-automazione.com/meccanica-automazione-7-ottobrenovembre/
Abstract	The article provides an overview of the activities carried out by AFIL in order to foster the skills updating in relation to Industry 4.0 and Factories of Future.

Web Dissemination

3-Project DigiFoF – Webpage in the AFIL website	
Authors	AFIL
Title	DigiFoF Webpage in the AFIL website
Dissemination support	Web Media
Target group	AFIL Stakeholders
Date	
Web	https://www.afil.it/progetti-iniziative/digit-fof/
Abstract	Information about the objectives, key partners and key actions of DigiFoF project

4-Project DigiFoF – Webpage in the AFIL website	
Authors	AFIL
Title	Promotion of DigiFoF Vocational Trainings in collaboration with UNIBG • News-1 • News-2 Promotion of DigiFoF NEMO days • News NEMO - Days
Dissemination support	Web Media
Target group	AFIL Stakeholders
Date	
Web	
Abstract	Information about the vocational training and its objectives

Social Media

5-Project DigiFoF – LinkedIn News	
Authors	AFIL
Title	Promotion of DigiFoF Vocational Trainings in collaboration with UNIBG • LinkedIn Post-2 • LinkedIn Post-3 • LinkedIn Post-3 Promotion of DigiFoF NEMO days • LinkedIn Post
Dissemination support	Social Media
Target group	AFIL Stakeholders
Date	
Web	
Abstract	Information about the vocational training and its objectives

6- Project DigiFoF – LinkedIn News	
Authors	UNIBG

6- Project DigiFoF – LinkedIn News	
Title	Follow up DigiFoF Meeting March 2021 • LinkedIn Post - 1
Dissemination support	Social Media
Target group	AFIL Stakeholders
Date	
Web	
Abstract	Information about the vocational training and its objectives

4.5 Press & network dissemination in Poland

1. Web dissemination

1-Digital Design Skills for Factories of the Future	
Authors	Arkadiusz Jurczuk
Title	Digital Design Skills for Factories of the Future
Dissemination support	Web media
Target group	Students, employees, industrial and academic partners
Date	15-06-2019 04-01-2019
Web	Website information, https://wiz.pb.edu.pl/2019/01/04/nowy-miedzynarodowy-projekt-badawczy/ (in Polish) Website information, http://www.amp2.pl/
Abstract	Information about the objectives, key partners and key actions of DigiFoF project

2. Dissemination of DigiFoF posters

2- Digital Design Skills for Factories of the Future - posters	
Authors	Arkadiusz Jurczuk, Beata Weremijewicz, Bialystok University of Technology
Title	Digital Design Skills for Factories of the Future
Dissemination support	Dissemination of 10 DigiFoF posters (paper version) – campus of Bialystok University of Technology
Target group	Students, employees, industrial and academic partners
Date	May 2019
Web	paper version
Abstract	DigiFoF poster explaining the objectives, key partners and key actions

1. Dissemination in press

3-Podlaska Brand (category: Project 4.0)	
Authors	Bialystok University of Technology/Metal Processing Cluster (Innovation and Development Promotion Centre)
Title	Podlaska Brand (category: Project 4.0) The Podlaska Brand of the Year Prize Competition The Podlaskie Voivodeship Marshal's Office
Dissemination support	Local press, regional media/web media
Target group	Local society
Date	2020 In progress
Web	Website information: https://podlaskamarka.pl/ Media: https://poranny.pl/w-xvi-edycji-konkursu-podlaska-marka-2019-wplynelo-ponad-200-zgloszen/ar/c3-14748988
Abstract	16th Edition of the The Podlaska Brand of the Year Prize Competition DigiFoF project has been presented as an example of innovative approach to competency designing for Industry 4.o. Competition's application presents: information about the objectives of the DIGIFoF project, key outputs and key actions of DigiFoF project

4-Kurier Poranny	
Authors	Bialystok University of Technology/Metal Processing Cluster (Innovation and Development Promotion Centre)
Title	Podlaska Brand
Dissemination support	Local press
Target group	Local society
Date	28.01.2020
Web	https://poranny.pl/podlaska-marka-2019-ponad-200-zgloszen-w-xvi-edycji-nagrody-wsrod-zgloszen-trawa-pigwoniada-woda-miejska-pelna-lista/ar/c1-14745094
Abstract	Press information about 16h edition of the contest "Podlaska Brand" and its participants.

5-Regional media: Podlaski Manager	
Authors	Bialystok University of Technology/Metal Processing Cluster (Innovation and Development Promotion Centre)
Title	Business and Science
Dissemination support	Regional media
Target group	Business, HEI
Date	April 2020

5-Regional media: Podlaski Manager	
Web	https://iph.bialystok.pl/wp-content/uploads/2020/03/PM_197_kwiecien_2020_online.pdf
Abstract	DIGIFoF project as an example of collaborative network of Bialystok University of Technology and business partners in Podlaskie region.

4.6 Press & network dissemination in Portugal

1-DIGIFOF - short summary	
Authors	SOCOLNET
Title	DIGIFOF - short summary
Dissemination support	SOCOLNET Newsletter Nº 20
Target group	Community of Collaborative Networks researchers
Date	July 2019
Web	https://docs.google.com/a/uninova.pt/viewer?a=v&pid=sites&srcid=dW5pbm92YS5wdHxzb2NvbG5ldHxneDo3YWZlNTUxYWIwY2I1MWEx and http://codis.uninova.pt/socolnet/pages/services/
Abstract	Brief summary of the DigiFoF project.

2-DIGIFOF - short summary	
Authors	SOCOLNET
Title	DIGIFOF - THE FOF DESIGNER: DIGITAL DESIGN SKILLS FOR FACTORIES OF THE FUTURE
Dissemination support	SOCOLNET Newsletter Nº 21
Target group	Community of Collaborative Networks researchers
Date	October 2019
Web	https://docs.google.com/a/uninova.pt/viewer?a=v&pid=sites&srcid=dW5pbm92YS5wdHxzb2NvbG5ldHxneDoyZGVhOTE2MWI3MmUwY2Ew and http://codis.uninova.pt/socolnet/pages/services/
Abstract	Brief summary of the DigiFoF project and related recent news.

3-Factory of the Future Education	
Authors	L Camarinha Matos
Title	Role of academia in Industry 4.0 in terms of human resources

3-Factory of the Future Education	
Dissemination support	Panelist in a special session, PRINT 2020 workshop, Florianopolis, Brazil
Target group	Community of Collaborative Networks researchers
Date	December 2020
Web	
Abstract	Scientific and expert Debate on Education for FoF

4.7 Press & network dissemination in Romania

1-15 universities and companies from abroad help students develop new skills	
Authors	
Title	15 universities and companies from abroad help students develop new skills
Dissemination support	Tribuna Sibiului Newspaper
Target group	
Date	
Web	http://www.tribuna.ro/stiri/eveniment/15-universitati-si-companii-din-strainatate-ii-ajuta-pe-studenti-sa-isi-dezvolte-competente-noi-141234.html
Abstract	

2-DigiFoF and OMiLAB Sibiu presentation	
Authors	Adrian Florea
Title	Digital Design Skills for the Factory of the Future
Dissemination support	Face-to-face presentation
Target group	32 rectors and deans from Cambodian Universities
Date	11-12 February 2020
Web	http://digifof.omilab.ulbsibiu.ro/psm/home
Abstract	

3-Web training material promote: Artificial Intelligence for Facial and Emotion Recognition	
Authors	Adrian Florea, Ioana Cofaru, Daniel Morariu
Title	Artificial Intelligence for Facial and Emotion Recognition
Dissemination support	Digital Innovation Hub - Smart, Safe and Sustainable Society Cluj IT cluster https://www.clujit.ro/
Target group	people interested in Industry 4.0 technologies

3-Web training material promote: Artificial Intelligence for Facial and Emotion Recognition	
Date	2020
Web	https://www.dih4society.ro/repository-and-resources/training-and-education
Abstract	

4-Web training material promote: Artificial Smart City Modelling	
Authors	Adrian Florea, Ioana Cofaru, Daniel Morariu
Title	Smart City Modelling
Dissemination support	Digital Innovation Hub - Smart, Safe and Sustainable Society Cluj IT cluster https://www.clujit.ro/
Target group	Municipalities and people interested in Industry 4.0 technologies
Date	2020
Web	https://www.dih4society.ro/repository-and-resources/training-and-education
Abstract	

5-Web training material promote: Artificial Introduction to Flexible Manufacturing Systems	
Authors	Adrian Florea, Ioana Cofaru, Daniel Morariu
Title	Introduction to Flexible Manufacturing Systems
Dissemination support	Digital Innovation Hub - Smart, Safe and Sustainable Society Cluj IT cluster https://www.clujit.ro/
Target group	people interested in Industry 4.0 technologies for creative engineering, municipality, decision factors, agencies
Date	2020
Web	https://www.dih4society.ro/repository-and-resources/training-and-education
Abstract	

6-Info Session for Conti Students: Workplace Safety – Face emotion recognition	
Authors	Adrian Florea, Valentin Fleacă, Cristian Mihuțoiu
Title	Info Session for Conti Students: Workplace Safety – Face emotion recognition
Dissemination support	Online presentation and discussions
Target group	57 students + 4 professors
Date	28.05.2020
Web	https://teams.microsoft.com/l/meetup-join/19%3ameeting_NGZkMThlZWYtYzI3MS00YTU5LWIyNGItNWY3ZTE1M2Zm

6-Info Session for Conti Students: Workplace Safety – Face emotion recognition	
	NjU2%40thread.v2/0?context=%7b%22Tid%22%3a%228d4b558f-7b2e-40ba-ad1f-e04d79e6265a%22%2c%22Oid%22%3a%22172901eb-6145-4c8a-946a-e7ae681ffaba%22%7d
Abstract	

7-Sibiu Innovation Days 2020 (SID 2020)	
Authors	Adrian Florea
Title	European Challenges from RDI
Dissemination support	Online panel
Target group	
Date	26.11.2020
Web	https://events.ulbsibiu.ro/innovationdays/#schedule-section
Abstract	

8-Sibiu Innovation Days (SID 2020)	
Authors	Adrian Florea
Title	Future of work
Dissemination support	Linkedin
Target group	
Date	26-27.11.2020
Web	https://www.linkedin.com/events/6730395118823632896/
Abstract	Sibiu Innovation Days has emerged from the desire to bring closer academia, businesses and decision makers.

9-Sibiu Innovation Days (SID 2020)	
Authors	Adrian Florea
Title	Digital transformation & industry 4.0, smart cities & society 5.0, AI & e-Health, and many more!
Dissemination support	Twitter - Director Irene Norstedt
Target group	
Date	26-27.11.2020
Web	https://twitter.com/EUScienceInnov/status/1323195141755072512?s=20
Abstract	Sibiu Innovation Days has emerged from the desire to bring closer academia, businesses and decision makers.

10Sibiu Innovation Days (SID 2020)	
Authors	
Title	**Research & Innovation (EUScienceInnov) - R&I Health**
Dissemination support	Twitter - Director Irene Norstedt
Target group	
Date	26-27.11.2020
Web	https://twitter.com/IreneNorstedt/status/1321816096299692032
Abstract	Sibiu Innovation Days has emerged from the desire to bring closer academia, businesses and decision makers.

11-Sibiu Innovation Days (SID 2020)	
Authors	
Title	**Research & Innovation (EUScienceInnov) - R&I Health**
Dissemination support	An official website of the European Union
Target group	
Date	26-27.11.2020
Web	https://ec.europa.eu/info/events/sibiu-innovation-days-2020-nov-26_en
Abstract	Sibiu Innovation Days has emerged from the desire to bring closer academia, businesses and decision makers.

11-Sibiu Innovation Days (SID 2020)	
Authors	
Title	**Research & Innovation (EUScienceInnov) - R&I Health**
Dissemination support	An official website of the European Union
Target group	
Date	26-27.11.2020
Web	https://ec.europa.eu/info/events/sibiu-innovation-days-2020-nov-26_en
Abstract	Sibiu Innovation Days has emerged from the desire to bring closer academia, businesses and decision makers.

12-Sibiu Innovation Days (SID 2021)	
Authors	
Title	
Dissemination support	

12-Sibiu Innovation Days (SID 2021)	
Target group	
Date	28-30.10.2021
Web	https://www.ulbsibiu.ro/news/transformarea-digitala-conditie-prealabila-pentru-sustenabilitate-in-toate-sectoarele-economice-si-pentru-societate-la-sibiu-innovation-days-2021-sid2021/ https://www.linkedin.com/events/sibiuinnovationdays2021683548372598 4251904/
Abstract	

13-Sibiu Innovation Days (SID 2021)	
Authors	
Title	Transformarea digitală: condiție prealabilă pentru sustenabilitate în toate sectoarele economice și pentru societate la Sibiu Innovation Days 2021
Dissemination support	online
Target group	
Date	28-30.10.2021
Web	https://www.turnulsfatului.ro/2021/10/22/transformarea-digitala-conditie-prealabila-pentru-sustenabilitate-in-toate-sectoarele-economice-si-pentru-societate-la-sibiu-innovation-days-2021-sid2021-186044?preview
Abstract	

5 Conclusions

This first version of deliverable 8.3 is an initial document which provides the details of the academic disseminations produced or planned to be produced in DigiFoF project. This deliverable is meant to be updated during the project as more dissemination materials are produced.

This list will be also updated on the project website at the following address.

https://www.digifof.eu/