8th CIRP IPSS CONFERENCE
Product-Service Systems across Life Cycle
2016
20-21 June, Bergamo (Italy)

PROGRAM DETAILS

PLENARY SPEAKER

20 June 2016 – MONDAY

ROOM "AULA MAGNA"

Key Notes:

Prof. Tobias C. Larsson (Blekinge Institute of Technology, Sweden)

Disruptive and democratizing technologies powering the transition towards circular economy and PSS

Prof. Rainer Stark (Berlin University of Technology, Germany)

Engineering of Product Service Systems: how comprehensive research solutions can drive new industrial frameworks

PARALLEL SESSION PROGRAM

	Room 5	Room 6	Room 2	Room 7	Room 8
Parallel Session 1	*Session 1* *Marco Bertoni (S)* PSS Design and Engineering - 1	*Session 2* *Mattias Lindahl (S)* Sustainability and PSS - 1	*Session 3* *Mohamed-Zied Ouertani (D)* Application of PSS in the B2B Industry or in the B2C Industry	*Session 4* *Nicola Saccani (IT)* The Evolution of Product-Service Systems Business Models - 1 *(Special Session)*	*Session 5* *Sergio Terzi (IT)* Product Service Systems and PLM *(Special Session)*
Parallel Session 2	*Session 6* *Tim MCAloone (DK)* PSS Design and Engineering - 2	*Session 7* *Daniel Brissaud (FR)* Sustainability and PSS - 2	*Session 8* *Yoshiki Shimomura (JP)* Customer Involvement in PSS	*Session 9* *Christian Kowalkowski (S)* The evolution of Product-Service Systems Business Models - 2 *(Special Session)*	*Session 10* *Paolo Gaiardelli (IT)* Literature Reviews on PSS - 1
Parallel Session 3	*Session 11* *Stefan Alexander Wiesner (D)* PSS Knowledge Management	*Session 12* *Koji Kimita (JP)* PSS Offering	*Session 13* *Shaun West (CH)* Industrial Product-Service Systems in Small and Medium Enterprises *(Special Session)*	*Session 14* *Mario Rapaccini (IT)* The Role of Digital and Other Enabling Technologies in Product-Service Systems *(Special Session)*	*Session 15* *Uta Wilkens(D)* Literature Reviews on PSS - 2
Parallel Session 4	*Session 16* *David Romero (MEX)* From Cost Estimation to Cost Engineering in Industrial Product Service Systems (Special Session)	*Session 17* *Giacomo Copani (IT)* Organisational Issues and Transition Management	*Session 18* *Luca Fumagalli (IT)* Maintenance and Service through Lifecycle	*Session 19* *Xavier Boucher (FR)* Operations Research/Management Science Approaches in PSS Design and Assessment *(Special Session)*	*Session 20* *Dimitris Mourtzis (GR)* Integrating Cloud Technologies, Social Network Analysis, Context Sensitive Tools and Knowledge Management for Eco-innovative Lean Product-Service Systems Design *(Special Session)*

Presenter Guidelines

Presentation time is critical: each paper is allocated 20 minutes for oral sessions. We recommend that presentation of your slides should take about 15 minutes, leaving 5 minutes questions from the audience.

Pre-recorded presentations are NOT ALLOWED, and the person giving the presentation MUST be able to take and answer questions regarding the content of the paper and associated research.

It is important that the sessions remain on time. The session chair(s) are responsible for keeping presentations on schedule.

Please upload your presentation file to the computer in the session room before the session starts. Be available by your room at least 10 minutes before the start of your session
Please do not attempt to use your own computer to connect to the projector. For speed and efficiency, use only the conference-provided computer for displaying your presentation.

PARALLEL SESSION 1

20 June 2016 – MONDAY   11:00/13:00

SESSION 1   ROOM 5

PSS Design and Engineering - 1

Session Chair: *Marco Bertoni (S)*

Adaptable and customizable development process for product-service systems

Claas C. Wuttke; Philipp Ludihuser; Stefan Bleiweis

A new approach for the development of services for industrial product-service systems

Dieter Haeberle; Saed Imran; Christian van Husen; Carsten Droll

Development and evaluation of solar energy B2B solutions

Kevin R. Wrasse; Haygazun Hayka; Rainer Stark

Experimenting the use of value models as boundary objects in conceptual PSS design

Massimo Panarotto; Marco Bertoni; Alessandro Bertoni

SErvice Engineering Methodology and energy services: applicability analysis and case study

Miriam Benedetti; Alice Rondini; Vito Introna; Vittorio Cesarotti; Sergio Cavalieri

SESSION 2   ROOM 6

Sustainability and PSS - 1

Session Chair: *Mattias Lindahl (S)*

Urban mining as a case for PSS

Christian Johansson; Jenny Elfsberg; Tobias C. Larsson; Martin Frank; Larry J. Leifer; Niklas Nilsson; Victor Söderberg

Systematic eco-innovation in Lean PSS environment: an integrated model

Diego A. de J. Pacheco; Carla S. ten Caten; Helena V. G. Navas; Carlos Fernando Jung; Virgílio Cruz-Machado; Gustavo H. N. Lopes

The impact of the popularization of clean energy vehicles on employment

Jun Osawa; Masaru Nakano

User-interface design for individualization services to enhance sustainable consumption and production

Stephan Hankammer; Maike Hora; Luca Canetta; Sultan K. Sel

Lifespan extension for environmental benefits: a new concept of products with several distinct usage phases

Tom Bauer; Guillaume Mandil; Élise Naveaux; Peggy Zwolinski

SESSION 3   ROOM 2

Application of PSS in the B2B Industry or in the B2C Industry

Session Chair: *Mohamed-Zied Ouertani (D)*

Towards an integrated decision making framework for aero engine MRO contract management in the productisation context

Arie Wibowo; Benny Tjahjono; Tetsuo Tomiyama

The Sustainable value proposition of PSSs: the case of ECOBEL "Shower head"

Gilles Neubert; Christine Lambey-Checchin

What's in it for the provider? The case of a telecom vendor's value capturing from the transition to product-service systems

Johannes Matschewsky; Tomohiko Sakao; Saeed Khanagha; Sofi W. Elfving

Development of a whole life cycle cost model for electrification options on the UK rail system

Leigh Kirkwood; Lorenzo Giuntini; Essam Shehab; Paul Baguley

Servitization methodology in ICT service system design

Shigeru Hosono; Eriko Numata; Yoshiki Shimomura

SESSION 4   ROOM 7

The Evolution of Product-Service Systems Business Models - 1 (special session)

Session Chair: *Nicola Saccani (IT)*

The relevance of managerial cognition for IPSS business model development

Uta Wilkens; Antje Lienert; Sofi W. Elfving

Innovative services for customized, availability-oriented business models for the capital goods industry

Gülsüm Mert; Christoph F. Herder; Nicole Menck; Jan C. Aurich

Functional products business model elements: five industrial cases mapped to Hill categories

John D. Lindström; Monika Kurkkio; Kent Nilsson

Business models for electric mobility

Katja Laurischkat; Arne Viertelhausen; Daniel Jandt

Transition to product-service systems: principles and business model

Ke Xing; David Ness

SESSION 5   ROOM 8

Product Service Systems and PLM (Special Session)

Session Chair: *Sergio Terzi (IT)*

A semantic information retrieval framework within the scope of IPS²-PLM

Michael Abramovici; Philip Gebus; Jens C. Göbel; Hoang B. Dang

Reference data architecture for PSSs life cycle inventory

Donatella Corti; Alessandro Fontana; Federico Montorsi

Open innovation for ideating and designing new product service systems

Eugenia Marilungo; Eva Coscia; Angelo Quaglia; Margherita Peruzzini; Michele Germani

The role of product-service systems regarding information feedback transfer in the product life-cycle including remanufacturing

Louise Lindkvist; Erik Sundin

Systematization of IPS2 diversification potentials using product lifecycle data

Michael Abramovici; Hoang B. Dang; Jens C. Göbel; Philipp Savarino

PARALLEL SESSION 2

20 June 2016 – MONDAY   14:15/16:15

SESSION 6   ROOM 5

PSS Design and Engineering - 2

Session Chair: *Tim MCAloone (DK)*

Virtual modelling for lifecycle performances assessment in aerospace design

Alessandro Bertoni; Christoffer Levandowski; Ola Isaksson; Tobias Larsson

Process standardization to support service process assessment and re-engineering

Roberta Curiazzi; Alice Rondini; Fabiana Pirola; Mohamed-Zied Ouertani; Giuditta Pezzotta

A framework to design integrated product-service systems based on the extended functional analysis approach

Hery T. Andriankaja; Xavier Boucher; Khaled Medini; Hervé Vaillant

Product-Service System (PSS) design: using design thinking and business analytics to improve PSS design

Jonatas O. Scherer; Ana Paula Kloeckner; José Luis D. Ribeiro; Giuditta Pezzotta; Fabiana Pirola

Boundary objects for PSS design

Marco Bertoni; Massimo Panarotto; Tobias C. Larsson

SESSION 7   ROOM 6

Sustainability and PSS - 2

Session Chair: *Daniel Brissaud (FR)*

Sustainability factors for PSS business models

Ana Paula Barquet; Johannes Seidel; Günther Seliger; Holger Kohl

Sustainable Product Service System (S.PSS) applied to Distributed Renewable Energy (DRE) in low and middle-income contexts: a case studies analysis

Elisa Bacchetti; Carlo Vezzoli; Paolo Landoni

Service outsourcing in recycling of used small electronics

Nozomu Mishima; Jun Oki; Akihiro Oikawa; Kenta Torihara; Yuta Kadowaki

On the use of intangible assets management in PSS projects

Romain Allais; Julie Gobert

Exploring the critical factors for sustainable product-service systems implementation and diffusion in developing countries: an analysis of two PSS cases in Brazil

Thayla T. Sousa-Zomer; Paulo A. Cauchick Miguel

SESSION 8   ROOM 2

Customer Involvement in PSS

Session Chair: *Yoshiki Shimomura (JP)*

> **Front-end conditions for product-service system design**
>
> *Ivo Dewit*
>
> **Framework for analyzing customer involvement in product-service systems**
>
> *Koji Kimita; Ryota Sugino; Monica Rossi; Yoshiki Shimomura*
>
> **Innovation in product-service system engineering based on early customer integration and prototyping**
>
> *Konrad Exner; Thomas Damerau; Rainer Stark*
>
> **Modelling influence and reach in sentiment analysis**
>
> *Rui Neves-Silva; Marta Gamito; Paulo Pina; Ana Rita Campos*
>
> **Improving PSS costing based on customer integration**
>
> *Wolfgang Seiringer; Wolfgang Bauer*

SESSION 9   ROOM 7

The Evolution of Product-Service Systems Business Models - 2 (Special Session)

Session Chair: *Christian Kowalkowski (S)*

> **Remanufacturing with upgrade PSS for new sustainable business model**
>
> *Elisabetta Chierici; Giacomo Copani*
>
> **A framework for PSS business models: formalization and application**
>
> *Federico Adrodegari; Nicola Saccani; Christian Kowalkowski*
>
> **Toward development of PSS-oriented business models for micro-manufacturing**
>
> *Golboo Pourabdollahian; Giacomo Copani*
>
> **A task management method for product service systems business model design**
>
> *Keita Muto; Koji Kimita; Hiroki Tanaka; Eriko Numata; Shegeru Hosono; Sayaka Izukura; Yoshiki Shimomura*
>
> **Business model development towards service management 4.0**
>
> *Mirka Kans; Anders Ingwald*

SESSION 10   ROOM 8

Literature Reviews on PSS - 1

Session Chair: *Paolo Gaiardelli (IT)*

Lean and green supply chain for the Product-Services System (PSS): the literature review and a conceptual framework

Ai Qiang Li; Pauline Found

Comparing PSS design models based on content analysis

Caio A. N. Marques; Glauco H. S. Mendes; Maicon G. Oliveira; Henrique Rozenfeld

Design for Product Service Supportability (DfPSS) approach: a state of the art to foster Product Service System (PSS) design

Claudio Sassanelli; Giuditta Pezzotta; Fabiana Pirola; Sergio Terzi; Monica Rossi

Systematic eco-innovation in PSS: state of the art and directions

Diego A. de Jesus Pacheco; Carla S. ten Caten; Helena V. G. Navas; Carlos F. Jung; Virgílio Cruz-Machado

A literature review of life cycle costing in the product-service system context

Marianna L. Kambanou; Mattias Lindahl

PARALLEL SESSION 3

20 June 2016 – MONDAY   16:40/18:00

SESSION 11   ROOM 5

PSS Knowledge Management

Session Chair: *Stefan Alexander Wiesner (D)*

The last border for servitization

Carolline A. Paslauski; Néstor F. Ayala; Guilherme L. Tortorella; Alejandro G. Frank

Improving product-service systems by exploiting information from the usage phase. a case study.

Johannes Lützenberger; Patrick Klein; Karl Hribernik; Klaus-Dieter Thoben

An analysis of buyer-supplier integration for servitization strategies

Néstor F. Ayala; Carolline A. Paslauski; José L. D. Ribeiro; Alejandro G. Frank

Classification framework of knowledge transfer issues across value networks

Samaneh Bagheri; Rob J. Kusters; Jos J. M. Trienekens; Hugo V. N. van der Zandt

SESSION 12   ROOM 6

PSS Offering

Session Chair: *Koji Kimita (JP)*

PSS offering in a B2B context: towards the drivers to enable integrated solutions

Daniel Battaglia; Miriam Borchardt; Lia Patrício

Product-service systems characterization based on life cycle: application in a real situation

Fernanda H. Beuren; Delcio Pereira; Alexandre B. Fagundes

Transforming a traditional product offer into PSS: a practical application

Marina Pieroni; Caio Marques; Carina Campese; Daniel Guzzo; Glauco Mendes; Janaína Costa; Maiara Rosa; Maicon Gouveia; Victor Macul; Henrique Rozenfeld

Requirements for product-service description for e-marketplaces in the manufacturing domain

Wolfgang Bauer; Jürgen Dorn

SESSION 13   ROOM 2

Industrial Product-Service Systems in Small and Medium Enterprises (Special Session)

Session Chair: *Shaun West (CH)*

Assessing manufacturing SMEs' readiness to implement service design

Giulia Teso; Andrew Walters

Successful product-service strategies and managerial practices: a case study research of the Italian heavy truck assistance networks

Marzia Morgantini; Paolo Gaiardelli; Lucrezia Songini; Paolo Bonesio

Creating product-service system opportunities for small and medium size firms using service design tools

Shaun West; Silvio Di Nardo

SESSION 14   ROOM 7

The Role of Digital and Other Enabling Technologies in Product-Service Systems (Special Session)

Session Chair: *Mario Rapaccini (IT)*

Life-cycle-oriented product-service-systems in the tool and die making industry

Günther Schuh; Michael Salmen; Thomas Kuhlmann; Jan Wiese

Exploring the key enabling role of digital technologies for product-service systems offerings

Marco Ardolino; Nicola Saccani; Paolo Gaiardelli; Mario Rapaccini

Additive manufacturing applications in the domain of product service system: an empirical overview

Massimo Zanardini; Andrea Bacchetti; Simone Zanoni; Milad Ashourpour

Overview about service labs worldwide: approaches, methods and use case to service along the lifecycle

Mike Freitag; Oliver Hämmerle; Stefan Wiesner

SESSION 15   ROOM 8

Literature Reviews on PSS - 2

Session Chair: *Uta Wilkens (D)*

Product-service system as an instrument for territorial and urban planning: from a literature review to a preliminary methodology

Carla Di Biccari; Giovanna Mangialardi; Angelo Corallo; Mariangela Lazoi

PSS design considering feedback from the entire product-service lifecycle and social media

Dimitris Mourtzis; Sophia Fotia; Marta Gamito; Rui Neves-Silva; Ana Correia; Philipp Spindler; Giuditta Pezzotta; Monica Rossi

The influence of ownership on the sustainable use of product-service systems - A literature review

Klara Demyttenaere; Ivo Dewit; Alexis Jacoby

A literature review to understand the requirements specification's role when developing integrated product service offerings

Sara Nilsson; Mattias Lindahl

PARALLEL SESSION 4

21 June 2016 – TUESDAY 15:00/17:00

SESSION 16   ROOM 5

From Cost Estimation to Cost Engineering in Industrial Product Service Systems (Special Session)

Session Chair: *David Romero (MEX)*

> **Product-service system for sustainable EAF transformers: real operation conditions and maintenance impacts on the life-cycle cost**
>
> *Beatrice Marchi; Simone Zanoni; Laura Mazzoldi; Riccardo Reboldi*
>
> **A system quality attributes ontology for product-service systems functional measurement based on a holistic approach**
>
> *Arturo Estrada; David Romero*
>
> **Towards a cost engineering method for product-service systems based on a system cost uncertainty analysis**
>
> *Arturo Estrada; David Romero*
>
> **Integration of cost-risk assessment of denial of service within an intelligent maintenance system**
>
> *Laurent Carlander; Leigh Kirkwood; Essam Shehab; Paul Baguley; Isidro Durazo-Cardenas*
>
> **Total cost of ownership for product-service system: application of a prototypal model to aluminum melting furnaces**
>
> *Stefano Bonetti; Marco Perona; Nicola Saccani*

SESSION 17   ROOM 6

Organisational Issues and Transition Management

Session Chair: *Giacomo Copani (IT)*

> **Organizational transformation towards product service systems - empirical evidence in managing the behavioral transformation process**
>
> *Achim Buschmeyer; Guenther Schuh; Daniel Wentzel*
>
> **Intermixed product and service boundaries: exploring servitization in sheet metal industry**
>
> *Antonella Meneghetti; Silvia Moro; Petri Helo*
>
> **Understanding the conditions of separation for an integrated organizational setup - PSS divisional boundaries in the light of heterogeneity and duality theories**
>
> *Bernd-Friedrich Voigt*

An initial training program on product-service systems and servitization for engineering students

Sophie Peillon; Khaled Medini; Nadine Dubruc

Organizing the integration demands across PSS life cycles: towards a specific form of improvisation for creating customer-specific solutions

Thomas Süße

SESSION 18   ROOM 2

Maintenance and Service through Lifecycle

Session Chair: *Luca Fumagalli (IT)*

Technicians and interventions scheduling for the maintenance service of container ships

Antonella Meneghetti; Elisa De Zan

FIT: a TRIZ based failure identification tool for product-service systems

Davide Russo; Valentino Birolini; Rossano Ceresoli

The challenges of cybersecurity frameworks to protect data required for the development of advanced maintenance

Jaime Campos; Pankaj Sharma; Erkki Jantunen; David Baglee; Luca Fumagalli

An approach based on improved grey model for predicting maintenance time of IPS2

Yuji Liu; Yaoguang Hu; Rui Zhou; Jingqian Wen

Bayesian networks-based association rules and knowledge reuse in maintenance decision-making of industrial product-service systems

Shasha Xiao; Yaoguang Hu; Jialin Han; Rui Zhou; Jingqian Wen

SESSION 19   ROOM 7

Operations Research/Management Science Approaches in PSS Design and Assessment (Special Session)

Session Chair: *Xavier Boucher (FR)*

Situation adapted field service support using business process models and ICT based human-machine-interaction

Eckart Uhlmann; Claudio Geisert; Niels Raue; Christian Gabriel

Process identification for customer service in the field of the after sales service as a basis for "lean after sales service"

Uwe Dombrowski; Constantin Malorny

Assessing the efficiency of a PSS solution for waste collection: a simulation based approach

Valerio Elia; Maria Grazia Gnoni; Fabiana Tornese

Towards a generic meta-model for PSS scenarios modelling and analysis

Xavier Boucher; Khaled Medini

A multi-agent based decision -making approach for field service delivery of IPS2

Rui Zhou; Yaoguang Hu; Shasha Xiao; Jingqian Wen

SESSION 20   ROOM 8

Integrating Cloud Technologies, Social Network Analysis, Context Sensitive Tools and Knowledge Management for Eco-innovative Lean Product-Service Systems Design (Special Session)

Session Chair: *Dimitris Mourtzis (GR)*

Supporting context sensitive lean product service engineering

Rui Neves-Silva; Paulo Pina; Philipp Spindler; Giuditta Pezzotta; Dimitris Mourtzis; Mariangela Lazoi; Dimitris Ntalaperas; Ana Rita Campos

Towards a reference procedure for designing and modelling a PSS in the automotive industry

Daniele Cerri; Sergio Terzi

Technology-based product-services for supporting frugal innovation

Marcello Colledani; Laura Silipo; Anteneh Yemane; Gisela Lanza; Jens Bürgin; Jan Hochdörffer; Konstantinos Georgoulias; Dimitris Mourtzis; Frank Bitte

The focus-activity framework for evaluating PSS cooperation readiness of manufacturing firms

David Kremer; Marco Seregni; Alessandro Canepa; Cristiano Zanetti; Sergio Gusmeroli

Novel tools for product-service system engineering

Sebastian Scholze; Ana Teresa Correia; Dragan Stokic

Requirements for cross-domain knowledge sharing in collaborative product-service system design

Stefan A. Wiesner; Fenareti Lampathaki; Evmorfia Biliri; Klaus-Dieter Thoben