

Alain Bernard
Louis Rivest
Debasish Dutta (Eds.)

Product Lifecycle Management for Society

10th IFIP WG 5.1 International Conference, PLM 2013
Nantes, France, July 6-10, 2013
Proceedings

Table of Contents

Keynotes

Product Lifecycle Management in an Open Industry Framework	1
<i>Shuichi Fukuda</i>	
Proposal for the Conceptual Design of Aeronautical Final Assembly Lines Based on the Industrial Digital Mock-Up Concept	10
<i>Fernando Mas, Alejandro Gómez, José Luis Menéndez, and José Ríos</i>	

PLM for Sustainability, Traceability and Performance

Product Portfolio Management: An Analysis of a Large Medical Device Company	20
<i>Aidan O'Connor and Kathryn Cormican</i>	
A Few Guidelines for a Good Usage of PLM Software	29
<i>Mickaël David</i>	
Components Margins through the Product Lifecycle	39
<i>Claudia Eckert, Chris Earl, Safaa Lebjioui, and Ola Isaksson</i>	
System Modeling: A Foundation for Costing Through-Life Availability Provision	48
<i>Ettore Settanni, Nils E. Thenent, and Linda B. Newnes</i>	
Product Life Cycle Data Management: A Cross-Sectoral Review	58
<i>Gary Ford, Tom Bartley, Joel Igba, Alison Turner, and Chris McMahon</i>	
Toward a Reference Architecture for Archival Systems	68
<i>Raphael Barbau, Joshua Lubell, Sudarsan Rachuri, and Sebti Fofou</i>	
Examining the Use of Model-Based Work Instructions in the Aviation Maintenance Environment	78
<i>Nathan W. Hartman and Timothy D. Ropp</i>	
Enhancing the Flow of Information in the PLM by Using Numerical DSMs – An Industrial Case Study	90
<i>Thomas Luft, Johanna Bochmann, and Sandro Wartzack</i>	
A Sustainability Lifecycle Assessment of Products and Services for the Extended Enterprise Evolution	100
<i>Margherita Peruzzini, Michele Germani, and Eugenia Marilungo</i>	

PLM Infrastructure and Implementation Processes

Knowledge Management for Complex Product Development: Framework and Implementation	110
<i>Alexander Smirnov, Alexey Kashevnik, Nikolay Teslya, Nikolay Shilov, Andreas Oroszi, Mario Sinko, Michael Humpf, and Jens Arneving</i>	
Uniting Lifecycle Information – From Items to Assets, from Concepts to Practice	120
<i>Marja Lintala and Pierre Bonnal</i>	
Integrated Platform from CAD to CNC: A Survey	130
<i>Christophe Danjou, Julien Le Duigou, and Benoît Eynard</i>	
Repositories and Interoperability Standards	140
<i>Hondjack Dehainsala and Philippe Perdriau</i>	
Developing a PLM Framework: A Case Study Application in an Energy Company	149
<i>Angelo Corallo, Mariangela Lazoi, Antonio Margarito, and Davide Pinna</i>	
A Framework for PLM Model Design	159
<i>Onur Yildiz, Philippe Pernelle, Lilia Gzara, and Michel Tollenaere</i>	
Proactive Engineering and PLM: Current Status and Research Challenges	170
<i>Frédéric Demoly, Henk Jan Pels, and Samuel Gomes</i>	
Established Mass Customization in Highly Customized Cabins of Passenger Transport Systems.....	182
<i>Felix Schulz, Lars Wolter, Turgay Coruh, Haygazun Hayka, and Rainer Stark</i>	
PLM and Classification Society Management in Marine Manufacturing Companies	194
<i>Niko Ville Salonen</i>	

Capture and Reuse of Product and Process Information

Improving Digital Engineering Tools in Complex Product Development by Means of an Adequate Monitoring of Research Projects	210
<i>Iris de Fontaines, Didier Lefeuve, Guy Prudhomme, and Michel Tollenaere</i>	

A Product Model to Capture and Reuse Ecodesign Knowledge	220
<i>Miriam Kozemjakin da Silva, Emmanuel Guyot, Sébastien Remy, and Tatiana Reyes</i>	
Capitalizing Data, Information and Knowledge on Mechanical Experiments through Ontologies	229
<i>Vincent Cheutet, Patrice Leclaire, Tony Da Silva Botelho, and Geneviève Inglebert</i>	
PLM and Knowledge Management	
Knowledge-Based Lifecycle Management Approach for Product Service Systems (PSS)	239
<i>Michael Abramovici, Youssef Aidi, and Hoang Bao Dang</i>	
Challenges in Knowledge Management for Structuring Systems	249
<i>Vincent Cheutet, Marc Zolghadri, Florent Couffin, Patrice Leclaire, Roberta Costa Affonso, and Caroline Bourcier</i>	
Knowledge Management in E-commerce Mass Customization	259
<i>Yang Xu, Jing Xu, and Alain Bernard</i>	
A Knowledge Based Collaborative Platform for the Design and Deployment of Manufacturing Systems	268
<i>George Pintzos, Loukas Rentzos, Konstantinos Efthymiou, Nikolaos Papakostas, and George Chryssoulouris</i>	
A Knowledge Management Approach through Product Lifecycle Management Implementation: An Industrial Case Study	277
<i>Ricardo Mejía-Gutiérrez, Carolina Marroquín, and Juan David Giraldo-Gomez</i>	
Proposal of a Knowledge-Based Engineering Methodology for Mass Customization	287
<i>Kiyan Vadoudi and Sergio Terzi</i>	
Unified Taxonomy for Reference Ontology of Shape Features in Product Model	295
<i>Ravi Kumar Gupta and Balan Gurumoorthy</i>	
Deployment of Knowledge Management in a PLM Environment: A Software Integrator Case Study	308
<i>Sébastien Nila, Frédéric Segonds, Nicolas Maranzana, and Dorothee Crepe</i>	
Co-working for Knowledge Management in Cultural Heritage: Towards a PLM for Museum	317
<i>Benjamin Hervy, Florent Laroche, Alain Bernard, and Jean-Louis Kerouanton</i>	

Enterprise Systems Integration

A Reference Architecture for an Enterprise Knowledge Infrastructure ...	326
<i>Daniel Fitzpatrick, François Coallier, and Sylvie Ratté</i>	
A Case Study on the Integration of GPS Concepts in a PLM Based Industrial Context	336
<i>Francesco Ricci, Joel Sauza Bedolla, Javier Martinez Gomez, Suela Ruffa, Manuela De Maddis, and Paolo Chiabert</i>	
Product Lifecycle Management Adoption versus Lifecycle Orientation: Evidences from Italian Companies	346
<i>Monica Rossi, Dario Riboldi, Daniele Cerri, Sergio Terzi, and Marco Garetti</i>	

PLM and Influence of/from Social Networks

The Role of Enterprise Social Media in the Development of Aerospace Industry Best Practices	356
<i>Nancy Doumit, Greg Huet, and Clément Fortin</i>	
A LCIA Model Considering Pollution Transfer Phenomena	365
<i>Xi Yu, Aicha Sekhari, Antoine Nongailard, Abdelaziz Bouras, Suiran Yu, and Qingyan Yang</i>	
Web-Based Portal for Sharing Information through CAD/PLM Software during the Eco-product Development Process.....	375
<i>Idai Mendy Mombeshora and Elies Dekoninck</i>	

PLM Maturity and Improvement Concepts

A Meta-Model for Knowledge Representation Integrating Maturity for Decision Making in Engineering Design	385
<i>Nicolas Drémont, Nadège Troussier, Robert Ian Whitfield, and Alex Duffy</i>	
Towards Higher Configuration Management Maturity.....	396
<i>Masoud Niknam and Jivka Outcharova</i>	
Product Lifecycle Management: Measuring What Is Important – Product Lifecycle Implementation Maturity Model	406
<i>Abram L.J. Walton, Cynthia L. Tomovic, and Michael W. Grieves</i>	
A Reverse Engineering Method for DMU Maturity Management: Use of a Functional Reeb Graph	422
<i>Guillaume Herlem, Guillaume Ducellier, Pierre-Antoine Adragna, Alexandre Durupt, and Sébastien Remy</i>	

Case Study on the Relation of PLM Maturity, Architecture and Business Processes	432
<i>Antti Pulkkinen, Ville Vainio, and Noora Rissanen</i>	
PLM Components Selection Based on a Maturity Assessment and AHP Methodology	439
<i>Haiqing Zhang, Yacine Ouzrout, Abdelaziz Bouras, Antonio Mazza, and Matteo Mario Savino</i>	
 PLM and Collaborative Product Development	
The Use of a Service Modeler Together with a PLM Software for the Management of Product-Related Services: A First Use-case-based Approach to Configure Service Components for Product-Related Services.....	449
<i>Christian Zinke, Kyrill Meyer, Florian Golemo, and Lars-Peter Meyer</i>	
Agile Design Methods for Mechatronics System Integration.....	458
<i>Matthieu Bricogne, Nadège Troussier, Louis Rivest, and Benoît Eynard</i>	
Integrating User to Minimize Assembly Path Planning Time in PLM ...	471
<i>Yu Yan, Emilie Poirson, and Fouad Bennis</i>	
New Product Development Process in Fashion Industry: Empirical Investigation within Italian Companies	481
<i>Elisa Soldani, Monica Rossi, Romeo Bandinelli, and Sergio Terzi</i>	
Cycle Oriented Quality Management at the Interface of Product Development and Production Planning	491
<i>Jonas Koch, Josef Greitemann, Christian Plehn, and Gunther Reinhart</i>	
Digital Factory Assistant: Conceptual Framework and Research Propositions.....	500
<i>Mohamed Anis Dhuieb, Florent Laroche, and Alain Bernard</i>	
A Tool to Support PLM Teaching in Universities.....	510
<i>Joel Sauza Bedolla, Francesco Ricci, Javier Martinez Gomez, and Paolo Chiabert</i>	
 PLM Virtual and Simulation Environments	
Application of PLM for Bio-Medical Imaging in Neuroscience.....	520
<i>Marianne Allanic, Alexandre Durupt, Marc Joliot, Benoît Eynard, and Philippe Boutinaud</i>	

Proposition of Ergonomic Guidelines to Improve Usability of PLM Systems Interfaces 530
Perrine de Pinel, Nicolas Maranzana, Frédéric Segonds, Sylvain Leroux, and Vincent Frerebeau

Development of Automatic Assembly Sequence Generating System Based on the New Type of Parts Liaison Graph..... 540
Hong-Seok Park, Jin-Woo Park, Myon-Woong Park, and Jae-Kwan Kim

Comparison of Configuration Rule Visualizations Methods 550
Anna Tidstam and Johan Malmqvist

A Product Avatar for Leisure Boats Owners: Concept, Development and Findings 560
Karl Hribernik, Thorsten Wuest, and Klaus-Dieter Thoben

Experimenting New Metaphors for PDM through a Model Driven Engineering Scheme 570
Frédéric Noël and Mohd Azwan Azli

Advanced Engineering Visualization with Standardized 3D Formats 584
Christian Emmer, Arnulf Fröhlich, and Josip Stjepandic

Special Session: BIM

Characteristics of Green BIM: Process and Information Management Requirements..... 596
Shalini Gandhi and Julie Rose Jupp

Developing a Building Information Modelling Educational Framework for the Tertiary Sector in New Zealand 606
Garry Miller, Shubham Sharma, Claire Donald, and Robert Amor

Building Information Modeling (BIM) and the Construction Management Body of Knowledge..... 619
Mehmet Yalcinkaya and David Arditi

Incomplete BIM Implementation: Exploring Challenges and the Role of Product Lifecycle Management Functions 630
Julie Rose Jupp

Challenges for Integrated Design and Delivery Teams in AEC 641
Vishal Singh

Systems Engineering as a First Step to Effective Use of BIM 651
Henk Jan Pels, Jeroen van Beek, and Ad den Otter

Multidisciplinary AEC Education Utilising BIM / PLIM Tools and Processes	663
<i>Jennifer A. Macdonald and Marko Granroth</i>	
Industrial Papers	
Collaborative Engineering Paradigm Applied to the Aerospace Industry	675
<i>Fernando Mas, José Luis Menéndez, Manuel Oliva, Alejandro Gómez, and José Ríos</i>	
The Usage of the Standards into the Long Term Archiving and Retrieval, and the Exchange of Engineering Design Data	685
<i>Frédéric Chambolle</i>	
Change Management and PLM Implementation	695
<i>Kamal Cheballah and Aurélie Bissay</i>	
Securing Data Quality along the Supply Chain	702
<i>Sergej Bondar, Christoph Ruppert, and Josip Stjepandic</i>	
Lessons Learned for Better Management of Master Geometry	712
<i>Tümay Mart and Can Cangelir</i>	
Author Index	723