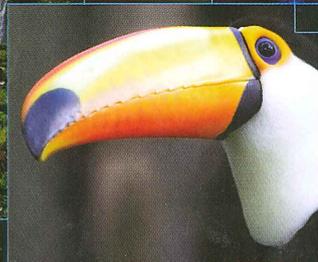


# 22<sup>nd</sup> INTERNATIONAL CONFERENCE ON PRODUCTION RESEARCH ICPR 22

**CHALLENGES FOR SUSTAINABLE OPERATIONS**

**July 28 – August 1, 2013 in Iguassu Falls, Brazil**



## Message from the Conference Chair

The *International Conference on Production Research* – ICPR is being held in Brazil for the first time since it began in 1971.

Over 430 full papers have been submitted from roughly 40 different countries. This is an indication of the relevance of the ICPR in the technical-scientific context and international recognition of the growing interest in Brazil and its importance on the world scene.

The ICPR is a well-established event of major technical importance and quality that provides an extraordinary opportunity for networking and collaborative projects among researchers and other professionals. In addition to all of this, it also has the distinct characteristic of being a pleasant meeting of friends who like Production Research!

The ICPR is an event offered by the *International Foundation for Production Research* – IFPR, and this year it is being organized by *Pontifical Catholic University of Paraná* – PUCPR, the *Brazilian Association of Production Engineering* – ABEPRO and the *Production Engineering Department of the University of São Paulo* (USP).

We couldn't have chosen a better setting for the 22nd ICPR, for networking, work and friendship. This year it will be in Iguassu Falls, one of nature's Wonders, located on the border between Brazil and Argentina at the Iguassu National Park - the world largest subtropical river forest reserve – listed by UNESCO as a World Heritage Site.

The main theme of the 22nd ICPR– *Challenges for Sustainable Operations* – is appropriately symbolized by Iguassu Falls and the Itaipu Hydroelectric Plant, an engineering marvel, and to this date the largest energy-producing hydroelectric plant in the world.

The Conference offers three Plenary Sessions on the theme: *Sustainable Business Performance in the New World Order*, by Prof. Chris O'Brien (UK), *Advances in Planning and Control Models for Sustainable Production*, by Prof. Shimon Nof (USA), and *City of the Future - Urban Production*, by Prof. Dr.-Ing. Dr.-Ing. E.h. Dieter Spath (Germany). Also, Dr. Glauco Arbix, President of the Brazilian Agency for Innovation– FINEP, will talk about *Brazil: Institutional Building for Innovation-based Development*.

To open the event, Mr. João Mocolin, the Industrial Director of *Natura*, will present the company's innovative initiatives in the area of sustainability.

For the scientific arm of the ICPR there will be technical sessions where approximately 400 papers on the various themes in Production Research will be presented, in addition to Special Sessions: *Methodology and Research Design*, *Meet the Editors* with the Editors of the *International Journal of Production Research* (the Official Journal of IFPR), *International Journal of Production Economics* and *Journal of Manufacturing Technology Management*, and the Panel on *Future Trends in Production Research*, with a representative from Brazil, and from the United States, Germany and the Philippines, representing each of the three regions of the IFPR (Americas Region, Africa, Europe and Middle East Region and Asia-Pacific Region).

Before the start of the event, Dr. Rob Dekkers will coordinate the *Doctoral Training and Early Career Researchers Program* where board members of the IFPR will help young researchers to formulate their research profiles. Three promising early career researchers will receive the Early Career Researchers Mentoring Award and will be mentored for two years by board members of the IFPR, and invited to present a keynote speech during the next Conference. This year, Dr. Kamil Erkan Kabak (Beykent University, Istanbul, Turkey), the winner at the 21st ICPR, will deliver the speech *Simulation Models in Operations Management: Reaching Beyond Post-positivism?*

In addition to the quality of the event and its incomparable Room, we are pleased to offer special programming for Spouses, along with good music, food and Brazilian hospitality for all to have an enjoyable time.

Welcome!

Dr. Sergio E. Gouvea da Costa  
Conference Chair  
Secretary-General IFPR



## Message from the IFPR President

On behalf of the International Foundation for Production Research: IFPR, we would like to welcome all participants to the 22nd International Conference on Production Research: ICPR in Iguassu Falls, Brazil. This is the second time the ICPR is being held in South America.

Our work at IFPR has led to new business opportunities for younger researchers in the field of production research with this conference, including a doctoral training program, an early career research program and the early career researcher's mentoring award. The development and management of these programs has depended on the great contribution of Dr. Rob Dekkers.

The main theme of this conference is *Challenges for Sustainable Operations*. We know Brazil is the country that organized the United Nations Conference on Environment and Development in 1992, called the 1st Earth Summit. That conference started many international operations in environmental management.

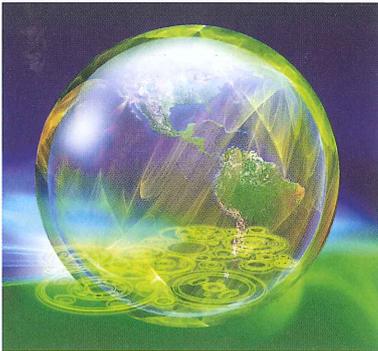
Brazil is one of the most economically successful developing countries in the world in recent years. Moreover, Brazil will be hosting the 2014 FIFA World Cup and the 2016 Summer Olympics that will provide many opportunities to create value in this country.

We are delighted that you have chosen to join us and hope that you are excited about the Conference in Iguassu Falls. We also wish you a personally satisfying and professionally rewarding stay in Iguassu Falls. Enjoy the conference and the beautiful and rich natural environment of Brazil. Por favor desfrute o ICPR.

Professor Dr. Kazuyoshi Ishii  
President of IFPR



## ICPR 22 - Challenges for Sustainable Operations



Conference Chair:  
Prof. Dr. Sergio E. Gouvea da Costa, PUCPR (Brazil)

Conference Co-Chair:  
Prof. Dr. Afonso Fleury, USP (Brazil)

International Scientific Committee Chair:  
Prof. Dr. Edson Pinheiro de Lima, PUCPR (Brazil)

### Members:

Miryam Barad, Israel | David Bennett, England and Sweden | Bopaya Bidanda, USA | Hans-Jörg Bullinger, Germany | Jose A. Ceroni, Chile | Antony Chui, Philippines | Cihan H. Dagli, USA | Rob Dekkers, Scotland | Michael P. Deisenroth, USA | Alexandre Dolgui, France | Toni Doolen, USA | Robert D. Dryden, USA | Marek Fertsch, Poland | Jennifer Farris, USA | Barbara Flynn, USA | Afonso Fleury, Brazil | Boaz Golany, Israel | Sergio E. Gouvea da Costa, Brazil | Robert W. Grubbstrom, Sweden | Chin-Yin Huang, Taiwan | Takaya Ichimura, Japan | Kazuyoshi Ishii, Japan | Moshe Kaspi, Israel | Athakorn Kengpol, Thailand | Geert Letens, Belgium | Ming Li, China | Bart MacCarthy, England | Masayuki Matsui, Japan | Gonzalo Mejía, Colombia | Ricardo Naveiro, Brazil | Shimon Y. Nof, USA | Toyokazu Nose, Japan | Christopher O'Brien, England | Jan Olhager, Sweden | Veikko Orpana, Finland | Eui H. Park, USA | Jinwoo J. Park, Korea | Raimondo Pasquino, Italy | Ken W. Platts, England | Edson Pinheiro de Lima, Brazil | Luis E. Quezada, Chile | Jens Schütze, Alemanha | Wilfried Sihn, Austria | Amrik Sohal, Australia | Dieter Spath, Germany | Kim Hua Tan, England | Agostino Villa, Italy | Eileen Van Aken, USA | Veli-Matti Virolainen, Finland | Robert Young, USA

### Local Organizing Committee:

Vagner Cavenaghi | Carolina H. G. Costa | Fernando Deschamps | André Gazoli | Elias Hans | Ney C. O. King | Tobias Krause | Carla G. Machado | Tainan Neves | Crislayne Plytiuk | Luiz F. Scavarda

# CHALLENGES FOR SUSTAINABLE OPERATIONS

## ICPR 22 - Program - Sessions

	INTP 2: International Production 2	SCML 1: Supply Chain and Logistics 1	PSMG 1: Production Systems and Management 1	QUES 1: Quality, Environmental and Social Issues 1	PRER 1: Production Education and Research 1	QREN 1: Quality and Reliability Engineering 1
	Room: Assunção	Room: Brasília	Room: Buenos Aires	Room: Cascavel	Room: Curitiba	Room: Foz do Iguaçu
Monday, 29/Jul/2013 2:00 pm - 3:30 pm	<p><b>BUILDING AN ANALYTICAL FRAMEWORK FOR THE STUDY OF EMERGING COUNTRY MULTINATIONALS' OPERATIONS MANAGEMENT</b> <i>Fleury, Afonso; Ferreira, Silas; Cordeiro, Jose Henrique; Shi, Yongjiang</i></p> <p><b>MODELLING AND SIMULATION OF CONTEXT-DEPENDENT BEHAVIOURAL ASPECTS IN GLOBAL SUPPLY CHAINS</b> <i>Frazzon, Enzo Morosini; Albrecht, André; Lima, Antonio Diogo Passos</i></p> <p><b>AGILITY IN PRODUCTION NETWORKS – CLASSIFICATION, DESIGN AND CONFIGURATION</b> <i>Monanni, Max S.; Foschiani, Stefan</i></p> <p><b>OPTIMIZATION MODEL FOR VALUE-ADDED NETWORKS OF GLOBALLY OPERATING COMPANIES</b> <i>Lanza, Gisela; Ruhmann, Stefan; Stricker, Nicole; Kohl, Matthias</i></p>	<p><b>ON THE STORAGE SPACE ALRoom PROBLEM</b> <i>Tapia, Francisco; Covarrubias, Rodrigo; Miranda, Pablo A.; Gonzalez-Ramirez, Rosa</i></p> <p><b>THE IMPACT OF STORAGE STRATEGY IN THE COMPETITIVENESS OF THE BRAZILIAN SOYBEAN-COMPLEX</b> <i>Reis, João Gilberto Mendes Dos; Tsuji, Egidio Renostro; Machado, Sivanilza Teixeira; Santos, Rodrigo Couto; Deliberador, Lucas Rodrigues; Oliveira, Rone Vieira; Urlo, Luis César Siqueira; Costa Neto, Pedro Luiz De Oliveira</i></p> <p><b>COMPARISON BETWEEN DIFFERENT INVENTORY CONTROL MODELS FOR RANDOM AND PARTIALLY OBSERVED ENVIRONMENT</b> <i>Carvalho, Heitor Cunha; Tavares, José Jean-Paul Zanlucchi de Souza; Carvalho, João Carlos Mendes</i></p>	<p><b>IMPLEMENTATION OF PULL LOGIC OF FLOW IN JOB SHOP CONDITION – CASE STUDY</b> <i>Hadas, Lukasz; Pawlewski, Pawel; Fertsch, Marek; Cyplik, Piotr Seweryn</i></p> <p><b>MACHINE-SPECIFIC INCREASE OF PROCESS CAPABILITY IN ADDITIVE MANUFACTURING</b> <i>Eschey, Christian</i></p> <p><b>TRANSFORMATION OF THE PRODUCTION SYSTEM IN A MULTI-DEPARTMENTAL ENTERPRISE WITH A WIDE RANGE OF PRODUCTS</b> <i>Hadas, Lukasz; Cyplik, Piotr Seweryn; Fertsch, Marek</i></p> <p><b>THE EFFECT OF BUFFERS AND WORK-SHARING ON LINE PERFORMANCE WHEN PRODUCING SMALL BATCHES UNDER LEARNING EFFECTS</b> <i>Bukchin, Yossi; Wexler, Efrat</i></p>	<p><b>DEVELOPING A CONCEPTUAL FRAMEWORK FOR ASSESSING PRINTING COMPANIES OPERATIONS SUSTAINABILITY PRACTICES</b> <i>Kai, Dalton Alexandre; Lima, Edson Pinheiro de; Gouvea da Costa, Sergio E.</i></p> <p><b>SUSTAINABILITY SCENARIO IN THE FASHION APPAREL MANUFACTURING IN BRAZIL</b> <i>Garcia, Solimar; Nääs, Irenilza de Alencar; Bernini, Denise Simões Dupont; Sacomano, José Benedito</i></p> <p><b>INTEGRATION OF ENVIRONMENTAL VARIABLES INTO THE SIX SIGMA TECHNIQUE</b> <i>Lucato, Wagner Cezar; Vieira Jr., Milton; Santos, José Carlos da Silva</i></p>	<p><b>PROFESSIONALS' DEMANDS FOR PRODUCTION ENGINEERING: ANALYSING AREAS OF PROFESSIONAL PRACTICE AND TRANSVERSAL COMPETENCES</b> <i>Lima, Rui M.; Mesquita, Diana; Rocha, Carla</i></p> <p><b>MANAGEMENT SYSTEM OF EDUCATIONAL PROGRAM FOR PRODUCTION MANAGER</b> <i>Ishii, Kazuyoshi; Nakano, Makoto</i></p> <p><b>AN ENGINEERING MODELING APPROACH TO TEACHING HIGH SCHOOL MATHEMATICS</b> <i>Young, Robert E.; Keene, Karen Allen</i></p>	<p><b>MONITORING THE PROCESS MEAN WITH A SIDE-SENSITIVE SYNTHETIC-XBAR CHART</b> <i>Machado, Marcela Aparecida Guerreiro; Costa, Antonio Fernando Branco</i></p> <p><b>QUALITY CONTROL TOOLS IN CUSTOMIZED SYSTEMS: A COMPARATIVE STUDY</b> <i>Korzenowski, Andre Luis; Schwengber ten Caten, Carla</i></p> <p><b>PERFORMANCE OF A COMBINED CUSUM-SHEWHART CHART FOR BINOMIAL DATA FOR LARGE SHIFTS IN THE PROCESS MEAN</b> <i>Henning, Elisa; Samohyl, Robert Wayne; Walter, Olga Maria Formigoni Carvalho; Konrath, Andrea Cristina</i></p>
Monday, 29/Jul/2013 4:00 pm - 5:30 pm	<p><b>EENG 1: Enterprise Engineering 1</b></p> <p>Room: Assunção</p> <p><b>CORRELATION PROCESS IN CONTENT ANALYSIS FOR A BPM MODELING PROJECT</b> <i>Kluska, Rafael Araujo; Pinheiro de Lima, Edson; Gouvea da Costa, Sergio Eduardo; Machado, Carla Gonçalves; Cestari, Jose Marcelo Almeida Prado; Hundzinski, Leandro Navarro</i></p> <p><b>INFORMATION AND PROJECT MANAGEMENT SYSTEM FOR FACTORY PLANNING PROCESSES</b> <i>Hillmann, Mark Robert</i></p> <p><b>CROSS-ENTERPRISE COLLABORATION AS FLEXIBILITY STRATEGY FOR SMALL AND MEDIUM-SIZED ENTERPRISES</b> <i>Baum, Heiko; Schütze, Jens; Ganß, Martina; Ivanova, Ralica</i></p> <p><b>TOWARD AN EFFORT ESTIMATION MODEL FOR SOFTWARE PROJECTS INTEGRATING RISK</b> <i>Laqrichi, Safae; Gourc, Didier; Marmier, François</i></p>	<p><b>SCML 3: Supply Chain and Logistics 3</b></p> <p>Room: Brasília</p> <p><b>GREENING THE SUPPLY CHAIN: A MODEL FOR GREEN PERFORMANCE ASSESSMENT</b> <i>Sellitto, Miguel Afonso; Borchardt, Miriam; Pereira, Giancarlo Medeiros; da Silva, Rosnaldo Indácio</i></p> <p><b>CONNECTIONS BETWEEN LEAN SUPPLY CHAIN AND GREEN SUPPLY CHAIN: A LITERATURE REVIEW</b> <i>Drohmeretski, Everton; Rodrigues de Oliveira Neves, Tainan; E. Gouvea da Costa, Sergio (1,3); Pinheiro de Lima, Edson (1,3); de Oliveira Cordeiro, Gabriel</i></p> <p><b>LIFE CYCLE MODELLING FOR SUSTAINABLE SUPPLY CHAIN ENTERPRISES</b> <i>Accorsi, Riccardo; Manzini, Riccardo; Mora, Cristina; Cascini, Alessandro; Penazzi, Stefano; Pini, Chiara; Pilati, Francesco</i></p>	<p><b>PSMG 3: Production Systems and Management 3</b></p> <p>Room: Buenos Aires</p> <p><b>PERFORMANCE INDICATORS FOR FACTORY PLANNING ON THE BASIS OF THE VIRTUAL PRODUCTION INTELLIGENCE APPROACH</b> <i>Buescher, Christian; Hoffmann, Max; Reinhard, Rudolf; Schilberg, Daniel; Jeschke, Sabina</i></p> <p><b>EFFECTS OF ORGANIZATIONAL DECISIONS' LOCUS, TASKS STRUCTURES, RULES, IT DEPARTMENT'S VALUE, AND RESOURCE ON ERP SUCCESS</b> <i>Infinedo, Princely</i></p> <p><b>NEW APPROACHES FOR FACTORY PLANNING – INTEGRATION OF PLANNING PROCEDURE, PROJECT EXECUTION AND PROJECT DOCUMENTATION</b> <i>Wagner, Ulf; Müller, Egon; Oehme, Daniel; Riedel, Ralph</i></p> <p><b>STATIC AND DYNAMIC FACILITY LAYOUT METHODS USING EVOLUTION STRATEGIES IN CASE OF DIFFERENT SHAPES AND AREAS OF FACILITIES</b> <i>Hirabayashi, Naoki; Morizawa, Kazuko</i></p>	<p><b>QUES 3: Quality, Environmental and Social Issues 3</b></p> <p>Room: Cascavel</p> <p><b>PROPOSITION OF A STRUCTURAL MODEL OF AUDIT FOR SUSTAINABLE PROCEDURES.</b> <i>Pereira, Everaldo Antonio Rutana; Pinheiro, Edson de Lima; Gouvea, S.E. da Costa</i></p> <p><b>INDUSTRIAL CLUSTER DEVELOPMENT: EXAMINING THE IMPACT OF CSR IN INDONESIA</b> <i>Gunawan, Janti</i></p> <p><b>TELEWORK AND MANAGEMENT: TECHNOLOGY FOR A MORE SUSTAINABLE ENVIRONMENT</b> <i>Basso, Ricardo Fonte; Battistelli, Rosane Aparecida Gomes; Cavenaghi, Vagner</i></p> <p><b>EFFICIENCY RESOURCE MANAGEMENT TO ENSURE SUSTAINABILITY</b> <i>Perez Bolivar, Ruben Francisco</i></p>	<p><b>TIKM 4: Technology, Innovation and Knowledge Management 4</b></p> <p>Room: Curitiba</p> <p><b>APPLICATION OF LED LUMINAIRES IN COMBINATION WITH TELEMANAGEMENT CONTROL FOR URBAN LIGHTING EFFICIENCY</b> <i>Campos, Silvio José Fonseca de; Coutinho, Aparecido dos Reis</i></p> <p><b>FERTBRASIL: AN INNOVATIVE NETWORK FOR THE DEVELOPMENT OF TROPICAL SOILS FERTILIZERS</b> <i>Jesus, Igor Rosa Dias de; Benites, Vinicius de Melo; Polidoro, José Carlos; Laforet, Maria Regina Capdeville; Paiva, Denise Werneck de; Costa, Helder Gomes</i></p> <p><b>KNOWLEDGE MANAGEMENT APPLIED TO EXPLORATION &amp; PRODUCTION PROJECTS AT PETROBRAS</b> <i>Toledo, Ana Cristina Bastos; Naveiro, Ricardo Manfredi</i></p>	<p><b>QUES 5: Quality, Environmental and Social Issues 5</b></p> <p>Room: Foz do Iguaçu</p> <p><b>PASTURE INTENSIFICATION, AGROPASTORAL AND AGROSILVOPASTORAL SYSTEMS: ECONOMIC VIABILITY – BRAZILIAN CATTLE FARM</b> <i>Velazco B., Daniel Marcelo; Osaki, Mauro; Ozaki, Paulo Moraes; Carvalho, Thiago Bernardino; De Zen, Sergio</i></p> <p><b>THE PROBLEMS OF FOOD ECONOMY – ECOLOGICAL AND ETHICAL DIMENSION OF INNOVATION</b> <i>Dziedzic, Sylwia; Ostasz, Grzegorz; Wozniak, Leszek</i></p> <p><b>ECONOMIC AND ENVIRONMENTAL ASPECTS OF CATTLE PRODUCTION: LEGAL RESERVE REFORESTATION</b> <i>Santos, Mariane Crespolini dos; Miranda, Sílvia Helena Galvão de; Velazco B., Daniel Marcelo; De Zen, Sergio</i></p> <p><b>SOCIAL TECHNOLOGIES ON SMALL FARMS: A CASE STUDY IN BRAZIL</b> <i>Scalco, Andrea Rossi; Rotoli, Juliana De Andrade</i></p>

# 22<sup>nd</sup> INTERNATIONAL CONFERENCE ON PRODUCTION RESEARCH

## ICPR 22



	WHFE 1: Work Design, Human Factors and Ergonomics 1	TIKM 1: Technology, Innovation and Knowledge Management 1	PDEN 1: Product Design and Engineering 1	OSPF 1: Operations Strategy and Performance 1	SYMS 1: Systems Modeling and Simulation 1	OSPF 4: Operations Strategy and Performance 4
	Room: Guarapuava	Room: Londrina	Room: Maringá	Room: Montevideo	Room: Paranaguá	Room: Santiago
Monday, 29/Jul/2013 2:00 pm - 3:30 pm	<p><b>THREE-WAY PERCEPTUAL MAP OF OCCUPATIONAL RISKS</b> <i>Cardoso Junior, Moacyr Machado, Scarpel, Rodrigo Arnaldo</i></p> <p><b>WORK CONDITIONS IN MECHANICAL SUGARCANE HARVESTING IN BRAZIL: A REFLECTION ABOUT WORK ORGANIZATION PRACTICES ADOPTED BY THE MILLS</b> <i>Narimoto, Lidiane Regina; Camarotto, João Alberto; Alves, Francisco José da Costa</i></p> <p><b>WORKPLACE SAFETY CULTURE IN THE INDUSTRIAL PRODUCTION SECTOR</b> <i>Motta, Fátima Ataíde Da; Santos, Maruilio Jose Dos; Severiano Filho, Cosmo; Lessa, Lenita Villamarin Lopez</i></p>	<p><b>THE CHALLENGES OF KNOWLEDGE MANAGEMENT IN A BRAZILIAN BANK</b> <i>Günther, Helen Fischer; Zoucas, Alessandra; Vidotto, Juarez; dos Santos, Neri; Varvakis, Gregório</i></p> <p><b>CONCEPTUAL DESIGN OF A KNOWLEDGE MANAGEMENT PLATFORM OF A PORT COMMUNITY</b> <i>Cordova, Felisa Margarita; Duran, Claudia; Oddershede, Astrid</i></p> <p><b>STUDIES TO MINIMIZE WASTE IN A PRODUCTION PROCESS BY USING VALUE STREAM MAP AND KNOWLEDGE MANAGEMENT</b> <i>Machado, Cátia Milena Lopes; Kipper, Liane Mahlmann; Frozza, Rejane</i></p>	<p><b>A PLATFORM FOR INFORMATION AND DECISION SUPPORT IN ENGINEERING</b> <i>Lentes, Joachim; Zimmermann, Nikolas; Eckstein, Holger</i></p> <p><b>DEVELOPMENT OF DESIGN PRINCIPLES FOR AN INTEGRATED PRODUCT AND PROCESS DEVELOPMENT APPROACH FOR ROTATIONALLY SYMMETRIC PRODUCTS</b> <i>Schuh, Günther; Potente, Till; Thomas, Christina; Schmitz, Stephan; Covello, Claudio</i></p> <p><b>DECISION SUPPORT SYSTEM FOR RISK MANAGEMENT IN COMPLEX PROJECT DESIGN</b> <i>Filipas Deniaud, Ioana; Marmier, François; Gourc, Didier</i></p>	<p><b>DISTRIBUTED TEAMS' PERFORMANCE MEASUREMENT CAPABILITIES: A MODEL TO EVALUATE SYSTEMATIC LITERATURE REVIEW RESULTS</b> <i>Ferreira, Pedro Gustavo; Pinheiro de Lima, Edson; Gouvea da Costa, Sergio E.</i></p> <p><b>COMMUNICATION AMONG VIRTUAL IT PROJECT TEAMS: A SOCIAL NETWORK ANALYSIS</b> <i>Watanuki, Hugo Martinelli; Spinola, Mauro de Mesquita; Moraes, Renato de Oliveira</i></p> <p><b>ON THE EXPLORATION OF GLOBAL VIRTUAL ENGINEERING TEAM PERFORMANCE</b> <i>Chi, Shyue-Ping; Chang, Chia-Jen; Tsou, Chi-Ming</i></p>	<p><b>HYPER HEURISTIC BASED PRODUCTION PROCESS SCHEDULING TO IMPROVE PRODUCTIVITY IN SUSTAINABLE MANUFACTURING</b> <i>Wicaksono, Hendro; Prohl, Ernst Victor; Ovtcharova, Jivka</i></p> <p><b>A HEURISTIC FOR THE STOCHASTIC SINGLE-MACHINE PROBLEM WITH E/T COSTS</b> <i>Lemos, Rafael de Freitas; Ronconi, Débora Pretti</i></p> <p><b>EVALUATION OF AFFINELY ADJUSTABLE ROBUST COUNTERPART FOR THE CLSP</b> <i>Kaganova, Ekaterina; Dangelmaier, Wilhelm</i></p>	<p><b>DECISION-MAKING ON OUTSOURCING: FOUR SNAPSHOTS SPANNING 47 YEARS</b> <i>Dekkers, Rob; Barlow, Alexis; Chaudhuri, Atanu; Ogden, Susan; Saranga, Haritha; Williamson, Elizabeth</i></p> <p><b>MAKE-OR-BUY: MULTICRITERIA METHOD TO GUIDE THE DECISION IN MASS CUSTOMIZATION ORIENTED COMPANIES</b> <i>Vidor, Gabriel; Radke, Andreas; Fogliatto, Flavio; Tseng, Mitchel</i></p> <p><b>CORPORATE SUSTAINABILITY AND FINANCIAL PERFORMANCE</b> <i>Moralejo, Leandro Iantas; Stupka, Erica; Tardelli, Marcelo; Cassitas, Marcia</i></p>
Monday, 29/Jul/2013 4:00 pm - 5:30 pm	<p><b>PTEC 1: Production Technology 1</b></p> <p>Room: Guarapuava</p> <p><b>ASSESSMENT OF ENERGY SAVING POTENTIALS IN MANUFACTURING OPERATIONS</b> <i>Boehner, Johannes; Kuebler, Frank; Steinhilper, Rolf</i></p> <p><b>MULTI-TARGET OPTIMIZATION AND PROCESS WINDOW ANALYSIS IN SELECTIVE LASER MELTING OF HIGH-PERFORMANCE PARTS</b> <i>Krauss, Harald; Záh, Michael</i></p> <p><b>ENERGY CONSUMPTION REDUCTION IN CASE OF INTERMITTENT PRODUCTION THROUGH THE USE OF INVERTER TECHNOLOGY: A FEASIBILITY STUDY</b> <i>Faccio, Maurizio; Gamberi, Mauro</i></p>	<p><b>PDEN 4: Product Design and Engineering 4</b></p> <p>Room: Londrina</p> <p><b>MECHANICAL CONNECTIONS IN MULTI-VARIANT SERIES PRODUCTION: PROCESS SELECTION</b> <i>Rusitschka, Fabian; Efstria, Zafeiriou; Hansgeorg, Binz; Daniel, Roth</i></p> <p><b>OPPORTUNITIES OF MODULARITY FOR REUSE OF REQUIREMENTS INFORMATION IN PROJECT BASED MANUFACTURING</b> <i>Papinniemi, Jorma; Fritz, Johannes; Lipiäinen, Niko; Denger, Andrea; Hannola, Lea</i></p> <p><b>COLLABORATIVE DESIGN FOR ASSEMBLY: THE HUB-CI MODEL</b> <i>Zhong, Hao; Nof, Shimon Y.</i></p>	<p><b>PDEN 3: Product Design and Engineering 3</b></p> <p>Room: Maringá</p> <p><b>DESIGN AND MANUFACTURING OF LIGHTWEIGHT COMPONENTS FOR ELECTRIC VEHICLES</b> <i>Okulicz, Konrad; Koch, Boris; Zimml, Ralf</i></p> <p><b>CORONARY STENTS: NOVEL DESIGNS COMPARISON WITH BIOMATERIALS</b> <i>Vaizatsatya, Anweshana; De Mattos Veroneze, Gabriela; Li, Zhichao; Martin, Alexander Jarrett; Xu, Zhigang</i></p> <p><b>TEMPERATURE INDICATOR BASED ON THERMOCHROMIC SUBSTANCES</b> <i>Kubaski, Evaldo Toniolo; Schmidt, Samara; Sequinel, Thiago; Mandalozzo, Gustavo Ângelo; Vechineski, Flávia Nocêra; Tebcherani, Sergio Mazurek</i></p>	<p><b>OSPF 3: Operations Strategy and Performance 3</b></p> <p>Room: Montevideo</p> <p><b>SME NETWORKS PROFITABILITY EVALUATION: A SURVEY</b> <i>Villa, Agostino P.M.; Antonelli, Dario; Bruno, Giulia; Taurino, Teresa</i></p> <p><b>LEADERSHIP STYLE, ORGANISATIONAL CULTURE AND MANUFACTURING STRATEGY FORMULATION; EMPIRICAL EVIDENCE FROM SWEDISH SMES</b> <i>Löfving, Malin; Säfsten, Kristina; Winroth, Mats</i></p> <p><b>STRATEGIC CONSENSUS IN SMES: BEHAVIORAL OPERATIONS PERSPECTIVE ON MANUFACTURING STRATEGY</b> <i>Edh, Nina; Fredriksson, Anna; Winroth, Mats</i></p>	<p><b>SYMS 3: Systems Modeling and Simulation 3</b></p> <p>Room: Paranaguá</p> <p><b>SIMULATION-BASED OPTIMIZATION APPLIED IN AN AUTOMOTIVE COMPANY</b> <i>Bachega, Stella Jacyszyn; Tavares, Dalton Matsuo</i></p> <p><b>APPLYING OF GENETIC ALGORITHM IN THE SIMULATION AND OPTIMIZATION OF PROCESSING OF BROCCOLI BY VACUUM COOLING</b> <i>Ding, Tian; Alves, Wonder; Araújo, Sidnei; Santana, José; Liu, Fen; Ye, Xing-Qian</i></p> <p><b>FUZZY OPTIMIZATION TO ALLROOM-PACKING OF CUSTOMIZED FOOD PARCELS IN FOOD BANKS</b> <i>Cuevas Ortuño, Jonathan; Gómez Padilla, Alejandra</i></p> <p><b>SOLVING AN INVESTMENT OPTIMIZATION PROBLEM BY AN IMPROVED GRAPHICAL APPROACH</b> <i>Gafarov, Evgeny R.; Dolgui, Alexandre; Lazarev, Alexander A.; Werner, Frank</i></p>	<p><b>SCML 5: Supply Chain and Logistics 5</b></p> <p>Room: Santiago</p> <p><b>A SIMULATION-BASED APPROACH FOR COORDINATING INLAND FLOWS ON A CONTAINER TERMINAL</b> <i>González Ramírez, Rosa Guadalupe; Mar-Ortiz, Julio; Gracia-Guzmán, María Dolores; Serrato, Marco</i></p> <p><b>A METHOD FOR BENCHMARKING CONTAINER TERMINALS OPERATIONS' PRACTICES</b> <i>Castro, Vinicius Ferreira de; Frazzon, Enzo Morosini; Constante, Jonas Mendes; Valente, Amir Mattar</i></p> <p><b>LOGISTICS PLATFORM: A FRAMEWORK BASED ON SYSTEMATIC REVIEW OF THE LITERATURE</b> <i>da Silva, Rafael Mozart; Pereira Senna, Eliana Terezinha; Santos Senna, Luiz Afonso; Lima Júnior, Orlando Fontes</i></p>

	EENG 2: Enterprise Engineering 2	SCML 7: Supply Chain and Logistics 7	PSMG 4: Production Systems and Management 4	QUES 7: Quality, Environmental and Social Issues 7	PDEN 5: Product Design and Engineering 5	QUES 6: Quality, Environmental and Social Issues 6	SYMS 4: Systems Modeling and Simulation 4
	Room: Assunção	Room: Brasília	Room: Buenos Aires	Room: Cascavel	Room: Curitiba	Room: Foz do Iguaçu	Room: Guarapuava
Tuesday, 30/Jul/2013 8:30 am - 10:00 am	<p>SUSTAINABILITY INTEGRATION ASPECTS IN MODELING AND ENGINEERING ENTERPRISES <i>dos Reis Alves, Daniel Franco; de Campos, Renato</i></p> <p>FROM TECHNOLOGY MARKET TO MARKET SUCCESS – METHODS AND TOOLS FOR BUSINESS MODEL ENGINEERING <i>Bullinger, Hans-Jörg; Rüger, Marc; Schäfer, Andreas; Bergmann, André</i></p> <p>STRUCTURING AND PRIORITING PORTFOLIOS OF ENGINEERING PROJECTS <i>Modica, Jose Eduardo; Rabechini Jr., Roque; Lucato, Wagner Cezar</i></p>	<p>HAZARDOUS MATERIALS TRANSPORTATION: AN OPTIMIZATION APPROACH <i>Victoria, Jorge; Velasco, Nubia; Gutiérrez, Eliécer; Muñoz, Felipe</i></p> <p>BARRIERS AND DRIVERS ON PRODUCT RETURN: A CASE STUDY IN A REVERSE LOGISTICS SERVICE PROVIDER IN BRAZIL <i>Bouzon, Marina; Scarduelli, Luana Villain; de Arruda, Bruna Lehmkuhl; Godke, Ana Luisa Mota; Rodriguez, Carlos Manuel Taboada</i></p> <p>KEY ELEMENTS TO SOLID WASTE MANAGEMENT INCLUDING REVERSE LOGISTICS OPERATIONS <i>Peña, Claudia Cecilia; Rubiano, Oscar; Vidal, Carlos Julio; Torres, Patricia; Marmolejo, Luis Fernando</i></p>	<p>CONTINUOUS IMPROVEMENT OF SIMULATION GAMES – AN EVALUATION BASED APPROACH <i>Krüger, Christian; Winkens, Maximilian; Nyhuis, Peter</i></p> <p>VALUE STREAM MAPPING AND EARNED VALUE ANALYSIS: A CASE STUDY IN THE PAPER PACKAGING INDUSTRY IN BRAZIL <i>Martins, Gleison Hidalgo; Cleto, Marcelo Gechele</i></p> <p>INVESTMENT DECISIONS IN RESPONSE TO UNCERTAINTY AND FINANCIAL CONSTRAINT <i>Camargo, Marina Barboza; Kalatzis, Aquiles Elie Guimaraes; Azzoni, Carlos Roberto</i></p> <p>OPTIMIZATION OF A DSS COLLABORATION SYSTEM – DEALING WITH INFORMATION OVERLOAD <i>Basso, Renato Gioielli; Moraes, Renato de Oliveira; Laurindo, Fernando José Barbin</i></p>	<p>ENVIRONMENTAL ASSESSMENT OF VARIETY-INDUCED COMPLEXITY IN PRODUCTION SYSTEMS <i>Kruse, Andreas; Butzer, Steffen; Steinhilper, Rolf</i></p> <p>EVOLUTION OF ENVIRONMENTAL MANAGEMENT INDICATORS FOR ECO-EFFICIENCY <i>Junior, Flavio Numata; UGAYN, Cassia Maria Lie</i></p> <p>IMPLICATIONS OF ENVIRONMENTAL REQUIREMENTS – CHANGE PROCESSES IN PRODUCTION SYSTEMS <i>Sannó, Anna; Deleryd, Mats; Fundin, Anders</i></p> <p>AN ANALYSIS OF THE RELATIONSHIP BETWEEN ENVIRONMENTAL INVESTMENTS AND EFFECTS CONSIDERING THE STAGES OF ENVIRONMENTAL MANAGEMENT <i>Takahashi, Masako; Tsuboi, Akira</i></p>	<p>OPTIMIZING THE SET-BASED CONCURRENT ENGINEERING (SBCE): NEW PRODUCT DEVELOPMENT MANAGEMENT DECISIONS <i>Rocha, Henrique Martins; Afonso, Ligia Maria; Oliveira, Ualison Rebula de</i></p> <p>A MODEL OF PROJECT SCENARIO EVALUATION TO MONITOR THE LEVEL OF PROJECT RISK AND ASSESS THE FEASIBILITY OF PLANNING <i>Marmier, François; Gourc, Didier; Robin, Vincent; Sperandio, Severine</i></p> <p>DESIGN FOR SUSTAINABILITY OF AGRICULTURAL MACHINES <i>Cascini, Alessandro; Mora, Cristina; Gamberi, Mauro; Bortolini, Marco; Accorsi, Riccardo; Manzini, Riccardo</i></p>	<p>INDUSTRIAL ECOLOGY AS A TOOL IN THE PURSUIT OF CORPORATE SUSTAINABILITY: AN ANALYSIS OF ECO-INDUSTRIAL PARKS IN DENMARK, AUSTRALIA AND BRAZIL <i>Marcondes, Thalita Kassner</i></p> <p>ENVIRONMENTAL EDUCATION, ECODESIGN AND LOGISTICS RESERVE FOR REDUCING ENVIRONMENTAL IMPACT AND CONTRIBUTION PROCESS OF A CLEANER PRODUCTION PROGRAM (CP) <i>Ribas Moraes, Jorge André; Silva, André Luiz Emmel; Nara, Elpidio Oscar Benitez; Machado, Enio Leandro; Brum, Tonia Magali Moraes</i></p> <p>AN INTEGRATED ONTOLOGY FRAMEWORK TO SUPPORT FAULT PROGNOSIS SYSTEM CONSIDERING ENVIRONMENTALLY CONSCIOUS PRODUCTION <i>Ebrahimipour, Vahid; Yacout, Sumaya</i></p> <p>ECO-INNOVATION: INNOVATION AND SUSTAINABLE DEVELOPMENT <i>Motta, Wladimir Henriques</i></p>	<p>BAYESIAN APPROACH FOR ARCH FAMILY MODELS IN THE ANALYSIS OF THE RETURN VOLATILITY OF A COMMODITY <i>Oliveira, Sandra Cristina de; Angelico, Diego Garcia; Higuchi, Mauricio Endo</i></p> <p>PARAMETRIZED ANALYSIS OF AN USED T5 LAMP LIFETIME <i>Moreira, Hermom Leal</i></p> <p>CONSISTENT CONJECTURAL VARIATIONS EQUILIBRIUM IN AN ELECTRICITY MARKET ALLOWING A MIXED OLIGOPOLY <i>Kalashnikov, Vyacheslav V. (1,3,4); Kalashnykova, Nataliya I. (2,4); Ovando-Montantes, Mario A.</i></p> <p>HOW ENERGY AFFECTS SUPPLY CHAIN PLANNING AT A PULP COMPANY <i>Waldemarsson, Martin; Lidestam, Helene; Karlsson, Magnus</i></p>
	INTP 1: International Production 1	SCML 2: Supply Chain and Logistics 2	PSMG 2: Production Systems and Management 2	QUES 2: Quality, Environmental and Social Issues 2	TIKM 3: Technology, Innovation and Knowledge Management 3	QUES 4: Quality, Environmental and Social Issues 4	WHFE 2: Work Design, Human Factors and Ergonomics 2
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Tuesday, 30/Jul/2013 10:30 am - 12:00 pm	<p>WHY GLOBAL VALUE CHAINS SHOULD ANALYSE MULTI-SIDED PLATFORMS? <i>Sakuda, Luiz Ojima; Fleury, Afonso</i></p> <p>THE INTERNATIONALISATION OF PRODUCTION: A NEW PRACTICE FOR SMEs <i>Cheng, Yang; Madsen, Erik Skov</i></p> <p>DETERMINING THE INFLUENCE AND ROLE OF MNES IN INDUSTRIAL CLUSTER PERFORMANCE: A CASE STUDY OF INDONESIA'S ELECTRONICS INDUSTRY <i>Gunawan, Janti; Fraser, Kym</i></p> <p>PRODUCTION NETWORK FLEXIBILITY: THE KEY TO PRODUCTION NETWORK COORDINATION <i>Fredriksson, Anna; Wänström, Carl</i></p>	<p>RISK MANAGEMENT OF PURCHASING AND SUPPLY: AN INVESTIGATION OF RISK MANAGEMENT PERFORMANCE <i>Hallikas, Jukka; Lintukangas, Katrina</i></p> <p>THE DEVELOPMENT OF A FRAMEWORK FOR A QUANTITATIVE RISK ASSESSMENT IN MULTIMODAL TRANSPORTATION IN GREEN LOGISTICS <i>Kengpol, Athakorn</i></p> <p>RISK MANAGEMENT IN SUSTAINABLE OPERATIONS <i>Giannakis, Mihalis; Soydan, Sinem</i></p> <p>A DYNAMIC SIMULATION ABOUT THE COLLABORATIVE MARITIME TRANSPORTATION <i>Silva, Vanina Macowski Durski; Coelho, Antonio Sergio; Novaes, Antonio Galvão</i></p>	<p>INTEGRATING LEAN AND ERP IN ENGINEER/MAKE-TO-ORDER SUBSEA COMPANIES <i>Hicks, Christian; Powell, Daryl</i></p> <p>ESTIMATING SHORT-TERM PRODUCTION PLANNING CHALLENGES IN MULTI-ITEM PRODUCTION <i>Tokola, Henri Alfred; Niemi, Esko</i></p> <p>A KANBAN SYSTEM IMPLEMENTATION PROPOSAL: A BRAZILIAN INDUSTRY CASE STUDY <i>Busarello, Daniel Silvano; Borges, Lilian Adriana</i></p> <p>RATIONAL USE OF IDLENESS IN MANUFACTURING CELLS <i>Coppini, Nivaldo Lemos; Lourenço, Wilson da Silva; de Souza, Edson Melo; Hassui, Amauri; Carvalho, Alexandre Augusto Martins</i></p>	<p>USE OF STATISTICAL CONTROL CHARTS FOR MONITORING HEPATITIS C IN RIO GRANDE DO SUL, BRAZIL <i>Pafadache, Caroline; Zanini, Roselaine; Souza, Adriano</i></p> <p>LIFE QUALITY CLUSTER „PODKARPACIE COUNTRY” – ECOINNOVATION IN THE REGION'S DEVELOPMENT <i>Wozniak, Marian; Dziedzic, Sylwia</i></p> <p>DEVELOPMENT OF AN ALTERNATIVE TECHNOLOGY FOR THE REMEDIATION OF COASTAL SOILS CONTAMINATED WITH WEATHERED HYDROCARBONS BY COUPLING CONVENTIONAL REMEDIATION TECHNOLOGIES <i>Jiménez, Veronica; Guerra, Ricardo; Cuevas, Carmen</i></p>	<p>EXPLOITATION-OPTIMIZED TECHNOLOGY DEVELOPMENT - ACCESSING THE CROSS-INDUSTRIAL POTENTIAL OF TECHNOLOGIES <i>Schuh, Günther; Graw, Myron; Hacker, Patrick Ansgar</i></p> <p>THE UNIVERSITY-INDUSTRY RELATIONSHIP FOR INNOVATING AND TECHNOLOGY TRANSFERRING: REFLECTIONS FROM A CASE STUDY IN A MINIMALLY PROCESSED FOOD FIRM <i>Jordão, Alessandro Augusto; Leonardi, Ana Lúcia; Fontes, Andréa Regina Martins; Silva, João Eduardo Azevedo Ramos da; Ferrarini, Cleyton Fernandes; Borrás, Miguel Ángel Aires</i></p> <p>ENVIRONMENTAL SCANNING AND SMES STRATEGIES: A CASE STUDY <i>Pimentel, Ana Carolina Manfrinato; Spinola, Mauro de Mesquita; Moraes, Renato de Oliveira</i></p>	<p>SCENARIO ANALYSIS FOR AUTOMATED DISASSEMBLY OF ELECTRIC BATTERIES IN AUTOMOTIVE <i>Weyrich, Michael; Natkunarajah, Nirugaa</i></p> <p>INTRODUCING THE ASSIEFF SOFTWARE DEMONSTRATOR – MOBILE ASSISTANCE FOR ENERGY EFFICIENT BEHAVIOUR ON A SHOP-FLOOR LEVEL <i>Spath, Dieter; Schlund, Sebastian; Laufs, Uwe; Ruff, Christopher; Gerlach, Stefan</i></p> <p>PROPOSAL OF ASSISTIVE TECHNOLOGY FOR PRODUCT IDENTIFICATION FOR VISUALLY HANDICAPPED <i>Rodrigues, Evandro; Malz, Rolf Fredi; Pedro, Ricardo</i></p>	<p>ROLE OF PRODUCTION ENGINEERS IN THE PUBLIC SECTOR <i>Jesus, Igor Rosa Dias de; Costa, Helder Gomes</i></p> <p>ERGONOMIC LOT SIZING: A NEW INTEGRATED PROCEDURE TOWARDS A SUSTAINABLE INVENTORY MANAGEMENT <i>Andriolo, Alessandro; Battini, Daria; Persona, Alessandro; Sgarbossa, Fabio</i></p> <p>ERGONOMIC ANALYSIS WORK IN PROCESS OF GROUTING CERAMIC IN CONSTRUCTION <i>Moreira, Hermom Leal; Lira, Monalisa Letúcia Barros</i></p> <p>ERGONOMIC INTERVENTION ANALYSIS AND THE OFFICE OF APPLIED ANALYSIS AND PROJECT DEVELOPMENT <i>Moreira, Hermom Leal</i></p>
	SERV 2: Service Engineering 2	SCML 8: Supply Chain and Logistics 8	PSMG 5: Production Systems and Management 5	WHFE 3: Work Design, Human Factors and Ergonomics 3	PRER 2: Production Education and Research 2	QREN 2: Quality and Reliability Engineering 2	SYMS 5: Systems Modeling and Simulation 5
	Room: Assunção	Room: Brasília	Room: Buenos Aires	Room: Cascavel	Room: Curitiba	Room: Foz do Iguaçu	Room: Guarapuava
Tuesday, 30/Jul/2013 4:00 pm - 5:30 pm	<p>A PRODUCT-SERVICE SYSTEM MATURITY MODEL (PSS-MM) <i>Karni, Reuven</i></p> <p>MEASURING RETURN ON SERVICE QUALITY USING NETWORK DEA AND ACS1 <i>Ohmori, Shunichi; Arunyanart, Sirawadee; Choi, Hanyong; Yoshimoto, Kazuho</i></p> <p>APPLICATION OF RFID BASED LOW-CARBON SCENIC INTEGRATED MANAGEMENT SYSTEM IN JUZHAIGOU AREA <i>Maozhu Jin, Zheng Di, Shang Wei, Peiyu Ren</i></p>	<p>IMPACT OF INFORMATION SHARING ON THE PARTNER'S PROFITABILITY IN A TWO-LEVEL SUPPLY CHAIN <i>Huang, Chin-Yin; Chen, Wu-Lin; Lin, Yun-Chen; Huang, Chin-Yin</i></p> <p>THE INFORMATION TECHNOLOGY IN THE CONTEXT OF SUPPLY CHAIN MANAGEMENT <i>Silva, Elizabeth Ribeiro Sanches da; Tella, Bianca Guedini</i></p> <p>PACKAGING DESIGN FOR E-OPERATIONS: A REFERENCE FRAMEWORK AND EXPERIMENTAL EVIDENCE <i>Santarelli, Giulia; Regattieri, Alberto; Bortolini, Marco; Cascini, Alessandro; Mora, Cristina</i></p>	<p>FLEXIBLE REAL TIME COMMUNICATION BETWEEN DISTRIBUTED AUTOMATION SOFTWARE AGENTS <i>Ulewicz, Sebastian; Schütz, Daniel; Vogel-Heuser, Birgit</i></p> <p>A BASIC STUDY ON PRODUCTION SCHEDULING FOR HIGHLY-DISTRIBUTED MANUFACTURING SYSTEMS <i>Morinaga, Eiji; Takagi, Akira; Wakamatsu, Hidefumi; Arai, Eiji</i></p> <p>RESOURCE EFFICIENT PLANNING AND OPERATION OF PRODUCTION SYSTEM USING IT-SUPPORTED FLEXIBILITY MANAGEMENT <i>Rogalski, Sven; Siebel, Jan; Wicaksono, Hendro</i></p> <p>INTRODUCING AN AUTOMATED RECONFIGURATION MECHANISM FOR FLEXIBLE MELTAL FORMING SYSTEMS USING A WEB-SERVICE BASED ARCHITECTURE APPROACH <i>Birkhold, Markus; Abel, Michael; Ver, Alexander</i></p>	<p>QUALITY OF LIFE WORK (QLW) AND RELATIONSHIP WITH THE INDEX OF EMPLOYEES ABSENTEEISM <i>Stefano, Nara Medianeira; Garcia Lupi Vergara, Lizandra</i></p> <p>AN AMT SELECTION FRAMEWORK INCORPORATING HUMAN FACTORS: FIELD APPLICATIONS/LESSONS LEARNT <i>Borges, Lilian Adriana; Hua Tan, Kim</i></p> <p>THE LEARNING CURVE APPLIED TO FIRE EXTINGUISHER TRAINING: A COMPARISON AMONG DIFFERENT TYPE OF FIRES <i>Oviedo-Trespalacios, Oscar; Manjarres, Ricardo; Peñabazna Nieves, Rita</i></p>	<p>TOWARDS AN ACADEMIC PLATFORM FOR ROBOT CONTROL <i>Tavares, Dalton Matsuo; Aroca, Rafael Vidal; Bacheaga, Stella Jacyszyn; Caurin, Glauco Augusto de Paula</i></p> <p>A COMPUTATIONAL TOOL FOR HELPING TO TEACH ROUTING ALGORITHMS <i>Lima, Stanley Jefferson de Araujo; Araújo, Sidnei Alves de</i></p> <p>STUDENTS' AND ALUMNI'S PROFILES ANALYSIS THROUGH THE DATA MINING TECHNIQUE: A CASE STUDY IN RIO DE JANEIRO STATE INTERIOR <i>Menezes, Thiago de Paiva; Souza, Ana Carla de Souza Gomes; da Hora, Henrique Rego Monteiro; Costa, Helder Gomes; da Hora, Ariele Lorena Barbaosa</i></p>	<p>THE IMPORTANCE OF THE NEW RELEASED OF QUALITY MANAGEMENT SYSTEMS STANDARD FOR AEROSPACE INDUSTRY SUPPLY CHAIN <i>Cunha, Luciane De Oliveira; Alves, João Murta Alves</i></p> <p>PRODUCT SAFETY WITHIN THE COMPLEX ENVIRONMENT OF A GLOBAL DEVELOPMENT AND PRODUCTION NETWORK <i>Haeefe, Steffen; Hillmann, Mark</i></p>	<p>A SIMULATION STUDY ON A MIXED INTEGER BASED SCHEDULER FOR SECONDARY RESOURCES IN A PARALLEL MACHINE WORK CENTER PROBLEM BASED ON A HIGH MIX – LOW VOLUME PRODUCTION <i>Doleschal, Dirk; Lange, Jan; Weigert, Gerald</i></p> <p>PETRI NET BASED ALGORITHM FOR THE RESOURCE CONSTRAINED PROJECT SCHEDULING PROBLEM (RCPSP): A REAL LIFE APPLICATION IN THE ANIMATION AND VIDEOGAME INDUSTRY <i>Mejia, Gonzalo; Niño, Karen; Sánchez, María Angélica</i></p> <p>SIMULATION: A TOOL FOR OPTIMIZATION OF JOB SHOP SCHEDULING PROBLEMS <i>Grassi, Flávio; Silva, Marilda Fátima de Souza da; Pereira, Fabio Henrique</i></p> <p>CONFIDENCE INTERVAL FOR SHORT TERM LOAD FORECASTING <i>Ferreira, Gilza Santos Simão</i></p>

	TIKM 5: Technology, Innovation and Knowledge Management 5	PDEN 6: Product Design and Engineering 6	OSPF 5: Operations Strategy and Performance 5	PTEC 2: Production Technology 2	SCML 6: Supply Chain and Logistics 6	PSMG 6: Production Systems and Management 6	OSPF 9: Operations Strategy and Performance 9
	Room: Londrina	Room: Maringá	Room: Montevideo	Room: Paranaguá	Room: Santiago	Room: Pacífico	Room: Atlântico
Tuesday, 30/Jul/2013 8:30 am - 10:00 am	<p>RELATIONSHIPS AMONG KNOWLEDGE MANAGEMENT, INNOVATION AND OUTCOMES: A PLS APPROACH <i>Frega, José Roberto; Ferraresi, Alex Antonio; Quandt, Carlos Olavo</i></p> <p>INNOVATION IN KNOWLEDGE-BASED SERVICES: AN OVERVIEW OF THE TELECOMMUNICATIONS PRODUCTIVE CHAIN IN BRAZIL <i>Ferreira, Alair Helena</i></p> <p>THE EFFICIENCY OF A BUSINESS TO BUSINESS SUPPLY CHAIN IN TRANSFORMING AN INNOVATION TO COMMERCIAL CONDITIONS <i>Löwgren, Claes Gunnar; Orpana, Veikko</i></p>	<p>FIRST STEPS TO CONSTRUCT A LIFE CYCLE FRAMEWORK FOR PSS <i>Hansch Beuren, Fernanda; Chauschik Miguel, Paulo A.</i></p> <p>USE OF LCA IN PROCESS DEVELOPMENT OF PRODUCT FOR GREEN MARKETS <i>Travessini, Rosana; Braghini Junior, Aldo; Zocche, Lidiana; Luz, Leila Mendes da; Rodrigues, Thaisa; Francisco, Antonio Carlos de</i></p> <p>THE INFLUENCE OF LIFE CYCLE ASSESSMENT AND ECO-INNOVATION IN ECODSIGN: A REVIEW <i>Aranes, Ariana Fernandes; Hamamoto, Tais; Madeira, Ligia Maria Moura; Ometto, Aldo Roberto</i></p>	<p>BREAKEYEN QUANTITIES USING THE VARIABLE COSTING METHOD <i>Brunstein, Leo; Costa, Reinaldo Pacheco</i></p> <p>ECONOMIC BREAKEYEN POINT AND INDIVIDUAL QUANTITIES OF PRODUCTS AND SERVICES <i>Brunstein, Leo; Costa, Reinaldo Pacheco</i></p> <p>APPLICATION OF ABC AS AN AUXILIARY TOOL FOR COST REDUCTION <i>Brito, André de Medeiros; Nobrega, Rodrigo de Queiroz; Silva, Elizabeth Ribeiro Sanches da; Leite, Maria Silene Alexandre</i></p>	<p>DEPOSITED PROPERTIES IN HARDFACING SAE 1020 SUBSTRATE BY USING ALLOY WELDING GTAW STELLITE 6 IN POWDER FORM <i>Moselli, Paulo Cezar Moselli; Moreno, João Roberto Sartori; Oliveira, Marcelo Falcão</i></p> <p>SELECTIVE FRICTION DAMPING OF HIGH PERFORMANCE FEED DRIVES <i>Frey, Siegfried; Verl, Alexander</i></p> <p>A NOVEL EXTRUSION PROCEDURE FOR THE PRODUCTION OF SUSTAINABLE COMPOSITE PRODUCTS <i>Toghiani, Amir E.; Varis, Juha; Kärki, Timo</i></p> <p>COMPOSITION TO OBTAIN ANTICORROSION COATINGS FOR STEEL AND IRON ALLOYS <i>Sequinel, Thiago; Kubaski, Eivaldo Toniolo; Leopoldo, Sergio; Barreiros, Weliton; da Silva, Suelen Crevelim; Tebcherani, Sergio Mazurek</i></p>	<p>A FRAMEWORK FOR ASSESSING SOCIAL SUSTAINABILITY IN SUPPLY CHAINS <i>Schiavon, Luis Carlos de Marino; Musetti, Marcel Andreotti</i></p> <p>MANAGEMENT SYSTEMS AND GOOD PRACTICES IN THE SUSTAINABLE SUPPLY CHAIN MANAGEMENT <i>Ching, Hong Yuh; Anderson, Mayco</i></p> <p>PRACTICES AND MOTIVATIONS OF GREEN SUPPLY CHAIN MANAGEMENT: MULTIPLE CASES IN BRAZILIAN INDUSTRY <i>Cordeiro, Diego Amatuzy; Schuhli, Diogo Henrique; Lopes, Thaisa dos Santos; Drohomerecki, Everton</i></p> <p>GOVERNANCE IN LOGISTICS PLATFORMS <i>da Silva, Rafael Mozart; Pereira Senna, Eliana Terezinha; Santos Senna, Luiz Afonso; Lima Júnior, Orlando Fontes</i></p>	<p>CYBER-PHYSICAL SYSTEM FOR SELF-ORGANISED AND FLEXIBLE LABOUR UTILISATION <i>Spath, Dieter; Gerlach, Stefan; Hämmerle, Moritz; Schlund, Sebastian; Strölin, Tobias</i></p> <p>REQUIREMENTS FOR AN EVALUATION MODEL FOR THE PROACTIVE MANAGEMENT OF HUMAN RESOURCE CAPACITY IN VOLATILE MARKETS <i>Spath, Dieter; Bauer, Wilhelm; Haemmerle, Moritz</i></p> <p>OPTIMIZING WORK-SHARING ASSIGNMENTS FOR REPLACEMENTS OF ABSENTEES IN ASSEMBLY LINES <i>Cohen, Yuval; Bukchin, Yossi</i></p> <p>THE AUTOMATION EQUIPMENT ACQUISITION PROCESS – EXPERIENCED USERS' PERSPECTIVE <i>Friedler, Niklas; Salonen, Antti; Johansson, Christer</i></p>	<p>PROCESS ARCHITECTURE AS A BASIS FOR A NEW MANAGEMENT PARADIGM <i>De Araujo, Leonardo Condeixa; Silva, Eduardo; Wajzenberg, Alberto; Paim, Rafael; Gagliard, Rita; Abreu, Marcelo; Weber, Renata; Gonçalves, Beatriz</i></p> <p>CRITICAL SUCCESS FACTORS OF FEL METHODOLOGY IN MANAGING MEGA PROJECTS <i>Duarte, Diego Lopes; Machado Filho, Marcus Vinicius; Braz, Liliانا Teixeira da Silva Monteiro; Farias Filho, Jose Rodrigues de</i></p> <p>PROCESS IMPROVEMENT METHODOLOGY FOR MANUFACTURING COMPANIES: A REDESIGN APPROACH <i>Peña Tibaduiza, Eliana Marcela; Ortiz Pimiento, Nestor Raúl</i></p>
Tuesday, 30/Jul/2013 10:30 am - 12:00 pm	<p>TIKM 2: Technology, Innovation and Knowledge Management 2</p> <p>Room: Londrina</p> <p>COMPUTING INTELLIGENCE APPLIED TO AN EVALUATION OF THE ACADEMIC MANAGEMENT <i>Gatti, Fernando Jose Alho; Costa, Ivanir; Shiguemori, Elcio Hideiti</i></p> <p>AUTOMATIC RULE-BASED INFERENCE OF CONTROL SOFTWARE CAPABILITIES CONSIDERING INTERDISCIPLINARY ASPECTS <i>Feldmann, Stefan; Legat, Christoph; Schütz, Daniel; Ulewicz, Sebastian; Vogel-Hueuser, Birgit</i></p> <p>STUDY OF TECHNOLOGY VALUATION FOR SCIENTIFIC INSTITUTIONS PROJECTS <i>de Faria, Adriana Ferreira; Suzuki, Jaqueline Akemi; Cambraia, Ana Clara; de Jesus, Gesiane Rodrigues; Rodrigues, Marcos Fernandes de Castro</i></p> <p>LEVERAGING RADIO FREQUENCY IDENTIFICATION (RFID) TECHNOLOGY IN A CLASSROOM ENVIRONMENT <i>Uzochnikwu, Benedict Madu; Eyob, Ephrem; Twine, Eric; James, Travon; Simpson, Jessica</i></p>	<p>PDEN 2: Product Design and Engineering 2</p> <p>Room: Maringá</p> <p>PRIORITIZATION OF CRITICAL SUCCESS FACTORS IN MANAGING THE PRODUCT DEVELOPMENT PROCESS OF BIOTECHNOLOGY COMPANIES <i>Salgado, Eduardo Gomes; Samaan, Monique; Mello, Carlos Henrique Pereira; da Silva, Carlos Eduardo Sanches</i></p> <p>PRODUCTION OF PRESSED PAPERBOARD MOCK-UPS <i>Lindell, Henry Nils; Salkinoja, Pekka; Kainusalmi, Miika Tapio; Leminen, Ville Pekka; Varis, Juha Pekka</i></p> <p>A REVIEW OF THE LITERATURE ABOUT PROJECT MANAGEMENT TOOLS <i>Duarte, Diego Lopes; Miranda Junior, Hamilton Lopes de; Farias Filho, Jose Rodrigues de</i></p>	<p>OSPF 2: Operations Strategy and Performance 2</p> <p>Room: Montevideo</p> <p>A FRAMEWORK TO CONSIDER PERFORMANCE INDICATORS FOR MEASURING OVERALL PRODUCTION CAPACITY UTILIZATION <i>Miyake, Dario Ikuo; Matias Busso, Christianne</i></p> <p>TOTAL PRODUCTIVE MAINTENANCE: A CASEY STUDY <i>Tondato, Rogerio; Gonçalves, Mirian Buss</i></p> <p>HOSHIN KANRI GUIDELINES <i>Giordani da Silveira, William; Deschamps, Fernando; Pinheiro de Lima, Edson; Gouvea da Costa, Sergio E.</i></p>	<p>SYMS 2: Systems Modeling and Simulation 2</p> <p>Room: Paranaguá</p> <p>THE IMPORTANCE OF PRODUCTION IN THE ERA OF SUSTAINABILITY: A VIEW FROM PERSPECTIVE OF FINANCIAL RISK ANALYSIS THROUGH SIMULATION <i>Flor, Aginaldo Junio</i></p> <p>ONTOLOGIES FOR SUPPORT PREVENTIVE MAINTENANCE PROCESSES OF CRITICAL IT ASSETS <i>Czelusniak, Dani Juliano; de Abreu, Aline Franca; Souza, João Artur; Dergint, Dario Eduardo do Amaral</i></p> <p>A TAXONOMY-BASED FUNCTIONAL MODEL DEVELOPMENT FOR SUSTAINABLE SUPPLY CHAIN DESIGN <i>Shuaib, Mohannad; Badurdeen, Fazleena</i></p>	<p>SCML 4: Supply Chain and Logistics 4</p> <p>Room: Santiago</p> <p>MODEL FOR SUPPLY CHAIN PERFORMANCE MEASUREMENT <i>Sellitto, Miguel Afonso; Pereira, Giancarlo Medeiros; Borchardt, Miriam; da Silva, Rosaldo Indício</i></p> <p>THE ROLE OF INFORMATION TECHNOLOGY ON SUPPLY CHAIN INTEGRATION AND ITS IMPACT ON THE PERFORMANCE: A QUANTITATIVE STUDY IN BRAZILIAN MANUFACTURING COMPANIES <i>Mattos, Claudia Aparecida; Laurindo, Fernando Jose Barbin</i></p>	<p>PSMG 8: Production Systems and Management 8</p> <p>Room: Pacífico</p> <p>TABU SEARCH ALGORITHMS VERSUS GENETIC ALGORITHMS IN DEALING WITH BI-CRITERIA HYBRID FLOW SHOP PROBLEMS <i>Bozogirad, Mir Abbas; Logendran, Rasaratnam</i></p> <p>MEAN VALUE ANALYSIS (MVA) APPROACH TO ESTIMATE CLEARING FUNCTIONS FOR CONWIP ENVIRONMENTS <i>Venkatadri, Uday; Mrishih, Sakher</i></p> <p>SCHEDULING COMPLEX PRODUCTION SYSTEMS WITH BLOCKING USING PETRI NETS AND BEAM A SEARCH: A HEAVY TRUCK REPAIR SHOP <i>Caballero, Juan Pablo; Mejia, Gonzalo Enrique</i></p> <p>CONSTRUCTIVE HEURISTIC STRATEGIES FOR THE FIELD TECHNICIAN SCHEDULING PROBLEM <i>Damm, Ricardo de Brito; Ronconi, Débora Pretti; Henriques, Luis Roberto Sant'Anna</i></p>	<p>PSMG 9: Production Systems and Management 9</p> <p>Room: Atlântico</p> <p>FLEXIBILITY NEEDS AND ENABLERS IN ASSEMBLY SYSTEMS <i>Svensson Harari, Natalia; Bruch, Jessica; Jackson, Mats</i></p> <p>AN ADAPTIVE CELLULAR MANUFACTURING SYSTEM FOR PRODUCING TWO KINDS OF PRODUCTS IN UNRELIABLE CELLS <i>Takahashi, Katsuhiko; Manago, Kazunori; Hirota, Daisuke; Makikawa, Katsumi</i></p> <p>ASSEMBLY CELL CONCEPT FOR HUMAN AND ROBOT IN COOPERATION <i>Olsen, Rickard; Johansen, Kerstin</i></p> <p>ENUMERATION OF THE STABLE OPTIMAL LINE BALANCES FOR A SIMPLE ASSEMBLY LINE BALANSING PROBLEM WITH FIXED CYCLE TIME <i>Zatsiupa, A.; Sotskov, Yu. N.; Dolgui, Alexandre</i></p>
Tuesday, 30/Jul/2013 4:00 pm - 5:30 pm	<p>TIKM 6: Technology, Innovation and Knowledge Management 6</p> <p>Room: Londrina</p> <p>A BIBLIOMETRIC ASSESSMENT ON SUSTAINABILITY IN INNOVATION MANAGEMENT CONTEXT <i>Werutsky, Viviane D' Barsoles Gonçalves; Vaz, Caroline Rodrigues; Viegas, Claudia Viviane; Selig, Paulo Mauricio</i></p> <p>RELATIONSHIP BETWEEN ORGANIZATIONAL INNOVATION AND CONSEQUENCE TO A NEW WORK MODEL CONCEPT <i>Guimarães, Marcia Regina Neves; Saltorato, Patricia; Fontes, Andrea Regina Martins; Borras, Miguel Angel Aires; Silva, João Eduardo Azevedo Ramos da; Garo Junior, Wagner Roberto</i></p> <p>FUNDAMENTAL STUDY OF TECHNOLOGY-PRODUCT-BUSINESS INNOVATION CHAIN USING EVOLUTIONARY GAME THEORY <i>Kato, Tomoyuki; Nishida, Ayako; Koshijima, Ichiro</i></p>	<p>PDEN 7: Product Design and Engineering 7</p> <p>Room: Maringá</p> <p>DEVELOPMENT OF SOFTWARE EDUCATIONAL FOR MOBILE DEVICE <i>Savoldi, Apledinei; Yoshikazu Ishida, Celso</i></p> <p>ANALYSIS OF VALUE ARCHITECTURES FOR AUTOMATION SYSTEMS EMPLOYING JOINING TECHNOLOGY <i>Weyrich, Michael; Winkel, Jens</i></p> <p>A METHOD FOR MANAGING THE 'REQUIREMENT SPACE' <i>Schuh, Günther; Hacker, Patrick Ansgar</i></p>	<p>OSPF 6: Operations Strategy and Performance 6</p> <p>Room: Montevideo</p> <p>A METHOD FOR GENERATING STRATEGY MAPS USING ANP <i>Quezada, Luis Ernesto; Palominos, Pedro Ivan; Olmedo, Alexis; Galleguillos, Rosa</i></p> <p>DEVELOPMENT OF A MANUFACTURING STRATEGY FRAMEWORK <i>Winroth, Mats; Säfsten, Kristina</i></p> <p>INTEGRATING PERFORMANCE MEASURES THROUGH DIFFERENT ORGANIZATIONAL LEVELS: A THEORETICAL ESSAY <i>Pauzi, Deise Cristina; Oliveira, Paulo Alípio Alves de; Frega, José Roberto</i></p>	<p>SYMS 6: Systems Modeling and Simulation 6</p> <p>Room: Paranaguá</p> <p>INTERRELATION COMPONENT OF ECONOMIC AND SOCIAL SECURITY BALANCE <i>Souza, Adriano Mendonça; Santos, Elisandra dos; Rocha, Lizandra Salau da; Requeijo, José Gomes</i></p> <p>USING ROUGH SETS THEORY TO SELECT STOCKS FOR INVESTMENTS AT STOCK EXCHANGE FROM SÃO PAULO <i>Kaupa, Paulo Henrique; Sassi, Renato José</i></p> <p>THE RELATION AMONG THE TOP TEN STOCK MARKETS IN THE WORLD AND THEIR CO-INTEGRATIONS <i>Souza, Adriano Mendonça; Wolf, Laion; Mezzomo, Meire; Requeijo, José Gomes</i></p> <p>MAXIMIZING THE PROFIT PER UNIT OF TIME FOR THE TRAVELLING SALESMAN PROBLEM <i>Kaspi, Moshe; Zofi, Moshe; Teller, Ron</i></p>	<p>OSPF 7: Operations Strategy and Performance 7</p> <p>Room: Santiago</p> <p>STUDY ON CORRELATION ANALYSIS IN THE USE OF PERFORMANCE MEASUREMENT SYSTEMS IN OPERATIONS STRATEGIC MANAGEMENT <i>Munik, Juliano; Pinheiro de Lima, Edson; Gryczak Gevert, Vania; Maoski Rocha, Letícia</i></p> <p>PERFORMANCE METRICS IN MANUFACTURING ENVIRONMENTS IN BRAZIL: FROM SIGNIFICANT CORRELATIONS TO CONTRARY-SIGNIFICATIONS <i>Severiano Filho, Cosmo Severiano; Moraes, Walter</i></p> <p>PRELIMINARY CONCEPTUAL PROPOSAL FOR THE DEVELOPMENT OF A PERFORMANCE MEASUREMENT SYSTEM ABOUT BRT SYSTEMS IN BRAZIL <i>Siluk, Julio Cezar Mairesse; Neuenfeldt Júnior, Alvaro Luiz; Alves, Vanessa Teresinha</i></p>	<p>PSMG 7: Production Systems and Management 7</p> <p>Room: Pacífico</p> <p>PRODUCTION CAPACITY ADJUSTMENT: THE ENGINE PLANT CASE STUDY <i>Moreira, Francisco</i></p> <p>BEST MATCHING AND TASK ADMINISTRATION PROTOCOLS FOR EFFECTIVE DEMAND AND CAPACITY SHARING <i>Moghaddam, Mohsen; Nof, Shimon Y.</i></p> <p>HOW CAPACITY PLANNING AFFECTS PRODUCTION COSTS IN OPTIMIZATION MODELS OF PRODUCTION PLANNING WHICH USE MATHEMATICAL DECOMPOSITION TO SOLVE THE MODEL <i>Sampaio, Raimundo José Borges de; Wollmann, Rafael Rodrigues Guimarães; Conte, Viviane C. Bini; Maestri, Géssica</i></p> <p>A MODIFIED BAT ALGORITHM FOR PRODUCTION SCHEDULING IN THE CAPITAL GOODS INDUSTRY <i>Chansombat, Sirikan; Musikapun, Ponnapa; Pongcharoen, Pupong; Hcks, Christian</i></p>	

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Wednesday, 31/Jul/2013	8:30 am - 10:00 am	MINIMIZING NURSE WALKING DISTANCE USING ZONING <i>Ben-Arieh, David; Wu, John</i>	SUPPLY CHAIN CONTRACTS: OPTION AND CAPACITY RESERVATION <i>Gomez Padilla, Alejandra; Mishina, Tsutomu</i>	DEVELOPING CARBON FIBER REINFORCED COMPONENT REPAIR TECHNOLOGIES BY USING OPTICAL METROLOGY AND CAD/ CAM-TECHNOLOGY <i>Ellert, Florian; Westermann, Hans-Henrik; Steinhilper, Rolf</i>	APPLYING STRATEGIC DESIGN IN NGOS: THE CHALLENGE OF TIME DIVERGENCES <i>Del Gaudio, Chiara; Jefferson de Oliveira, Alfredo; Franzato, Carlo</i>	DEVELOPING A SUSTAINABLE OPERATIONS MATURITY MODEL (SOMM) <i>Machado, Carla Gonçalves; Pinheiro de Lima, Edson; Gouveia da Costa, Sergio Eduardo; Cestari, Jose Marcelo Almeida Prado; Kluska, Rafael Araujo; Hundzinski, Leandro Navarro</i>	USE OF SIMULATION TO EVALUATE A LAYOUT PROPOSAL FOR A MINIMALLY PROCESSED VEGETABLES INDUSTRY <i>Garcia, Fabricio Afonso Gasques; Silva, Joao Eduardo Azevedo Ramos da; Borrás, Miguel Angel; Fontes, Andrea Regina Martins; Ferrarini, Cleiton Fernandes</i>
		NURSE SCHEDULING USING A MODIFIED METHODOLOGY VIA AUCTIONS AND OPTIMIZATION <i>Amaya, Ciro Alberto; Ducara, William; Velasco, Nubia</i>	GOOD PRACTICES FOR THE PLANNING AND SUPPORTING PROCESSES IN SUPPLY CHAIN MANAGEMENT <i>Diaz Jaimes, Maria del Pilar; Ortiz Pimiento, Nestor Raul</i>	ANALYSIS AND EVALUATION OF COLLISION DETECTION LIBRARIES FOR COLLISION MONITORING OF MULTI-CHANNEL CONTROL APPLICATIONS <i>Hoher, Simon; Neher, Philipp; Verl, Alexander</i>	HISTORY OF TECHNOLOGY PARKS IN THE STATE OF PARANÁ, BRAZIL <i>Yamamoto, Paulo Tetuo; Coutinho, Aparecido Dos R</i>	TOWARDS A METHODOLOGICAL FRAMEWORK FOR THE ENVIRONMENTAL ASSESSMENT OF FACTORY SYSTEMS <i>Krones, Manuela; Mueller, Egon</i>	TWO-STAGE TACTICAL PLANNING MODEL FOR THE MEAT PROCESSING INDUSTRY WITH DIVERGENT PRODUCTION FLOW <i>de Arruda Junior, Olinto Rodrigues; Santoro, Miguel Cesar</i>
	A STATIC NURSE SCHEDULING METHOD TO GENERATE ROBUST SCHEDULES FOR REOSTERING <i>Morizawa, Kazuko; Kitada, Manabu; Hirabayashi, Naoki</i>	WATER SUPPLY CHAIN RISK: MEASUREMENT AND MANAGEMENT <i>Pawar, Kul; Rogers, Helen; Srivastava, Mohit; Shah, Janat</i>	IMPLEMENTATION OF A STRATEGIC MANAGEMENT SYSTEM FOR IMPROVING THE PERFORMANCE OF A TRANSPORT SME ENTERPRISE <i>Vergara, Cesar; Veas, Cecilia Mont; Quezada, Luis</i>	SHAPE MEMORY POLYMER BASED CONTACT FACES FOR FLEXIBLE CAR BODY FIXTURES <i>Keller, Carsten; Drossel, Welf-Gundram; Pfeifer, Marko</i>	NETWORK ANALYSIS IN THE VALLEY OF ELECTRONICS: A LOCAL PRODUCTIVE ARRANGEMENT IN SANTA RITA DO SAPUCAÍ – BRAZIL <i>Costa Jr, Helio Lemes; Torkomian, Ana Lucia</i>	COMPARISON OF CORPORATE ENVIRONMENTAL PERFORMANCE USING JEPIX <i>Kumagai, Satoshi; Katayama, Nobuhiro</i>	MATHEMATICAL MODEL FOR PRIORITIZING WASTE APPLIED TO SMES. <i>Maceno, Marcell Mariano Corrêa; Pwalowsky, Urivald</i>
				ADAPTIVE SPINDLE SPEED VARIATION TO IMPROVE PROCESS STABILITY <i>Friedrich, Jens; Verl, Alexander</i>			REDUCTION IN THE ENVIRONMENTAL IMPACTS CAUSED BY THE ALUMINA PRODUCTION PROCESS THROUGH THE USE OF NEURAL NETWORKS <i>Gomes da Silva, Ruy; Arns Steiner, Maria Teresinha</i>
	SERV 3: Service Engineering 3	SCML 12: Supply Chain and Logistics 12	SCML 15: Supply Chain and Logistics 15	WHFE 4: Work Design, Human Factors and Ergonomics 4	TIKM 8: Technology, Innovation and Knowledge Management 8	QUES 9: Quality, Environmental and Social Issues 9	SYMS 8: Systems Modeling and Simulation 8
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Wednesday, 31/Jul/2013	10:30 am - 12:00 pm	DESIGN, DEVELOPMENT AND IMPLEMENTATION OF LEAN MANAGEMENT IN HEALTHCARE <i>Prado-Prado, J Carlos; Fernández-Pérez, Ruth; Mosteiro-Añón, Mar</i>	LEAN SUPPLY CHAIN MANAGEMENT CONTROLLED BY KANBAN POLICY <i>Nakashima, Kenichi; Sornmanpong, Thitima; Ehm, Hans; Yachi, Geraldine</i>	RESTRUCTURING OF THE LAYOUT IN A JOB SHOP ENVIRONMENT-A CASE STUDY <i>Silva, Alessandro Lucas; Silva, Adauto Lucas</i>	THE INFLUENCE OF IT CAPABILITY ON THE COMPETITIVE INTELLIGENCE PROCESS <i>Ramirez Aristizabal, Catalina; Oliveira De Moraes, Renato</i>	ENERGY MANAGEMENT FOR ISOLATED COMMUNITIES IN THE STATE OF AMAZONAS <i>Miki, Andre Jun; Monaro, Daniel Luis Garrido; Coutinho, Aparecido dos Reis</i>	LIFE CYCLE ASSESSMENT IN PRODUCTION SIMULATION USED BY PRODUCTION ENGINEERS <i>Andersson, Jon</i>
		MEASURING ENVIRONMENTAL SUSTAINABILITY IN THE HEALTHCARE SECTOR: FRAMEWORKS AND INDICATORS <i>Pasqualini, Andreia; Gouvêa da Costa, Sérgio Eduardo; Pinheiro de Lima, Edson</i>	SYSTEMATIC INNOVATION FOR LEAN SUPPLY CHAIN MANAGEMENT <i>Navas, Helena V. G.; Machado, Virgilio Cruz</i>	OPTIMAL JOB ROTATION SCHEDULING UNDER PRODUCTIVITY AND ERGONOMIC RISK CONSTRAINTS IN ASSEMBLY LINES <i>Romano, Vincenzo Alessio; Boenzi, Francesco; Digiesi, Salvatore; Mossa, Giorgio; Mummolo, Giovanni</i>	IT MANAGEMENT CAPABILITY IN A PHARMACEUTICAL COMPANY: A CASE STUDY <i>Ramirez Aristizabal, Catalina; Oliveira De Moraes, Renato</i>	SUSTAINABLE ENERGY PRODUCTION SYSTEM FROM JATROPHA IN MOZAMBIQUE PROJECT <i>Takechi, Shoji; Imou, Kenji</i>	HOW VIRTUAL PRODUCTION INTELLIGENCE CAN IMPROVE LASER-CUTTING PLANNING PROCESSES <i>Reinhard, Rudolf; Urs, Eppelt; Toufik, Al Khawli; Tobias, Meisen; Daniel, Schilberg; Sabina, Jeschke; Wolfgang, Schulz</i>
	THE PARTICIPATIVE DESIGN OF LEAN HEALTHCARE FACILITIES <i>Hicks, Christian; McGovern, Tom; Small, Adrian; Smith, Iain</i>	USING DISCRETE EVENT SYSTEM CONCEPTS IN SUPPLY CHAIN MANAGEMENT COMPOSED BY THREE PRODUCTION LEVELS SUBJECT TO UNCERTAINTY <i>Pacheco, Eduardo De Oliveira; Lüders, Ricardo Lüders; Delgado, Myriam Regattieri</i>	REORGANIZATION AND LEAN IN A KANBAN INVENTORY: A CASE STUDY <i>Siqueira Martins Domingos, Bianca; Batista Ribeiro, Rosinei; Medeiros de Barros, José Glênio; Henriques Araújo, Antônio; Tavares Matias, Nelson; Gonzaga, Marcelo</i>	A CONTRIBUTION OF HUMAN FACTORS APPROACHES ON THE STAGE OF TRANSLATION THE DEMAND INFORMATION TO PROJECT REQUIREMENTS IN THE PRODUCT DEVELOPMENT PROJECT <i>Diban, David Omar Nuñez; Ferreira, Marcelo Gtirana Gomes; Gontijo, Leila Amaral; Ferrellini, Fernando Antônio</i>	IMPACTS OF INFORMATION SYSTEM IMPLEMENTATION ON INDIVIDUAL WORK IN A SUPERMARKET CHAIN <i>Santos, G. D.; Anginoni, S. C.; Oliveira, G. A.; Trentin, M. G.</i>	MEXICAN ELECTRICITY SECTOR: CONJECTURAL VARIATIONS EQUILIBRIUM REFLECTING SOCIAL ROLE OF CFE. <i>Kalashnikov, Vitaliy; Kalashnykova, Natalya; Salazar, Jesus R.</i>	COMPUTATIONAL SIMULATION FOR SEMAPHORE CONTROL: AN ANALYSIS OF AN INTERSECTION IN THE CITY OF PETROLINA, PE, BRAZIL <i>Lima Junior, Paulo Cesar Rodrigues; Ferraz, Meriele Rodrigues; Carvalho, Jose Luiz Moreira; Silva, Ana Cristina Gonçalves Castro; Silva, José De Castro; Matos, Amanda Góes</i>
		BAYESIAN INFORMED SIMULATION FOR SUPPLY CHAIN RISK PROBABILITY AND IMPACT ASSESSMENT <i>Brown, Adam Jerome; Amundson, Joseph Soren; Badurdeen, Fazleena</i>	POSTURAL ANALYSIS OF PLASTERING ACTIVITIES IN CIVIL CONSTRUCTION <i>Artmann, Vanderléia; Gontijo, Leila Amaral; Merino, Eugenio Andres Díaz</i>	COLLABORATION WITH CONSUMERS EMPOWERED BY SOCIAL MEDIA IN SERVICE OPERATIONS <i>Yang, Ming-Hsien; Wu, Ji-Tsung Ben; Kao, Tzu-Yi; Chiang, Chang-Tang</i>		MONITORING AND CONTROL PROCESS FOR COMPOSTING SEWAGE SLUDGE THROUGH RESPIROMETRIC METHOD <i>Scoton, Edvaldo José; Battistelle, Rosane Aparecida Gomes; Renóio, Adilson; Akutsu, Jorge; Cavenaghi, Vagner; Egea, Juliana Santos</i>	
	EEENG 3: Enterprise Engineering 3	SCML 13: Supply Chain and Logistics 13	PSMG 10: Production Systems and Management 10	PRER 3: Production Education and Research 3	QUES 10: Quality, Environmental and Social Issues 10	SYMS 9: Systems Modeling and Simulation 9	
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Wednesday, 31/Jul/2013	4:00 pm - 5:30 pm	EKD METHODOLOGY AS A TOOL FOR OPERATIONAL EFFICIENCY IMPROVEMENT: CASE STUDY IN MOTOR CARRIER OPERATION <i>Schiavon, Luis Carlos de Marino; Guerrini, Fabio Muller; Gomes, Lucas Portilho Camargos; Musetti, Marcel Andreotti</i>	INDUSTRY 4.0 – MANUFACTURING WORK OF THE FUTURE - SURVEY RESULTS <i>Spath, Dieter; Ganschar, Oliver; Gerlach, Stefan; Hämmerle, Moritz; Jesemann, Isabella; Krause, Tobias; Schlund, Sebastian</i>	THE CREATION OF THE TECHNOLOGICAL INNOVATION PARK IN JOINVILLE AND REGION-SC/ BRAZIL <i>Ferreira, Nubia Alves de Carvalho; Garcia, Janaina Renata; Lezana, Alvaro Guillermo Rojas</i>	SUSTAINABILITY STANDARDS AND GUIDELINES REQUIREMENTS FOR INTEGRATED MANAGEMENT <i>Hundzinski, Leandro Navarro; Pinheiro de Lima, Edson; Gouveia da Costa, Sergio Eduardo; Machado, Carla Gonçalves; Cestari, José Marcelo Almeida Prado; Kluska, Rafael Araujo</i>	A NEW APPROACH TO JUDGMENTS WITH QUANTITATIVE DATA IN PAIRWISE COMPARISON MATRICES <i>Setti, Dalmarino; Trentin, M. G.; Adamczuk Oliveira, Gilson; Lima, J. D.</i>	
		ASSESSING THE DISASTER RESPONSE PROCESS OF A HEALTHCARE ORGANIZATION <i>Deschamps, Fernando; Van Aken, Eileen; Pinheiro de Lima, Edson</i>	A STUDY FOR AUTOMAKING OF STANDARDIZED WORK COMBINATION FORMS SUITED FOR SMALLER ENTERPRISES <i>Shibuya, Masahiro; Taki, Seiko; Iida, Kenichi; Hatazawa, Kenichi; Mikami, Koki</i>	INNOVATION IN OFFERING ENGINEERING COURSE: THE CREATION OF THE CENTER FOR ENGINEERING MOBILITY (CEM) IN JOINVILLE (SC-BR) <i>Garcia, Janaina Renata; Ferreira, Nubia Alves de Carvalho; Lezana, Alvaro Guillermo Rojas</i>	EMPIRICAL MODEL-BASED QUALITY MONITORING OF PRODUCTION PROCESSES WITH UNBALANCED MEASUREMENT DATA <i>Cho, Hyun-Woo</i>	ANALYTICAL SEQUENCING RULE DESIGN WITH MULTIPLE PROCESSING TIMES <i>Markwart, Paul</i>	
	HIGH PERFORMANCE FACTORIES THROUGH EFFECTIVE COMMUNICATION STRUCTURES <i>Reinema, Christian; Nyhuis, Peter</i>	STOCHASTIC DESIGN OF A GLOBAL CLOSED LOOP SUPPLY CHAIN: PLANNING AND MANAGING THE REVERSE NETWORK AT FUJI XEROX <i>Kainuma, Yasutaka; Disney, Stephen M.</i>	A CONTINUOUS METHOD FOR INTEGRATING NON-CONVENTIONAL TECHNOLOGIES INTO EXISTING PRODUCTION LINES <i>Frank, Gernot; Böck, Jochen; Schlägl, Wolfgang; Westkämper, Engelbert</i>	CHANGE AND KNOWLEDGE MANAGEMENT IN A JUNIOR COMPANY <i>Schmitt, Alan Christian; Bogo, Adelaide Maria; Henning, Elisa; Fernandes, Eduardo Silva</i>	A CONTENT ANALYSIS OF QUALITY MANAGEMENT RESEARCH <i>Foster, S. Thomas; Evans, James R.; Linderman, Kevin</i>	BINARY LINEAR PROGRAMMING FOR THE DESIGNATION OF MILITARY SHIFTS <i>Tocha, Carlos Alberto; Silva, Ruy Gomes; Andrade, Pedro Rochavetz de Lara; Silva, Arinei Carlos Lindbeck; Scarpin, Cassius Tadeu</i>	
	AN OVERVIEW OF ENTERPRISE INTEROPERABILITY ASSESSMENT <i>Cestari, José Marcelo Almeida Prado; Santos, Eduardo Portela; Loures, Eduardo Rocha</i>				THE RELATION OF SOCIO-ENVIRONMENTAL CERTIFICATIONS IN ORGANIZATIONAL PERFORMANC <i>Martens, Mauro; Nadae, Jennifer; Carvalho, Marly</i>		

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	Room: Londrina	Room: Maringá	Room: Montevideo	Room: Paranaguá	Room: Santiago	Room: Pacífico	Room: Atlântico
8:30 am - 10:00 am	<p>THE ROLE OF PROJECT MANAGEMENT OFFICES AS PERFORMANCE DRIVERS FOR NEW PRODUCT DEVELOPMENT <i>Barbalho, Sanderson César Macêdo; Toledo, José Carlos de Toledo</i></p> <p>AGENT BASED SIMULATION FOR INNOVATED PRODUCTS PORTFOLIO MANAGEMENT <i>Sepulveda, Juan M.; Alfaro, Miguel D.; Retamal, Felipe I.</i></p> <p>NEW EXPERIENCES OF SALES BASED ON EMERGING TECHNOLOGIES: TOOL DIGITAL CATALOGUE AND COLLECTION REQUEST FOR TABLET <i>Mazini, Sergio Ricardo; Novaes, Edimilson Ricardo Azevedo</i></p>	<p>RISK ANALYSIS IN BEEF CATTLE PRODUCTION AND EUCALYPTUS INTEGRATION <i>Ruy Sacchetti Dias, Luiz Fernando; Bernardino de Carvalho, Thiago; Gorgens, Eric</i></p> <p>APPLICATION OF BAYESIAN NETWORKS TO PREDICT APPLIANCES' NPD TIME TO MARKET <i>Barros, Marcos Vinicius; Possamai, Osmar; Oliveira Dalla Valentina, Luiz Veriano; Oliveira, Marco Aurelio</i></p> <p>THE APPROACH OF RISK MANAGEMENT IN THE QUALITY MANAGEMENT SYSTEM OF AEROSPACE INDUSTRY SUPPLY CHAIN <i>Cunha, Luciane De Oliveira; Alves, João Murta Alves</i></p>	<p>ANALYSIS OF PRODUCTION SYSTEMS WITH POTENTIAL FOR SEVERE DISRUPTIONS <i>Luangkesorn, Louis; Klein, Garrett; Bidanda, Bopaya</i></p> <p>THE EFFECT OF ENHANCED FLEXIBILITY IN THE RECONFIGURABLE MANUFACTURING CELL <i>Seo, Jinwu; Park, Jinwoo</i></p> <p>AGAINST-MEANINGS OF FLEXIBILITY METRICS IN MANUFACTURING ADVANCED: WHAT SHOULD BE MEASURED? <i>Severiano Filho, Cosmo Severiano; Moraes, Walter</i></p>	<p>PROCESS CAPABILITY INDICES TO EVALUATE THERMAL PERFORMANCE OF REFRIGERATED VEHICLES <i>Novaes, Antonio G.N.; Lima Jr, Orlando F.; Carvalho, Carolina C. de; Takebayashi, Fabiana</i></p> <p>AN ASSESSMENT OF BROILER CHICKENS WEIGHT LOSS DUE TO TRANSPORT <i>Adamczuk Oliveira, Gilson; Freitas, D. B.; Santos, G. D.; Setti, D.</i></p> <p>TRANSPORT AND CO2 EMISSION: BEEF LOGISTICS FROM BRAZIL TO EUROPE <i>Velazco B., Daniel Marcelo; Campos, Pedro de Mello; De Zen, Sergio; Deblitz, Claus</i></p> <p>COMBINED SIMULATION OPTIMIZATION APPROACH FOR AN AGRICULTURAL SUPPLY CHAIN REDESIGN <i>Borodin, Valeria; Bourtembourg, Jean; Hnaien, Faïcel; Labadie, Nacima</i></p>	<p>INTERNATIONAL FIRM PERFORMANCE: STRATEGIC CHOICE OR OPERATIONAL PRESSURE? <i>Breginski, Rodrigo Bonfim; Cleto, Marcelo Gechele; Sassi Junior, Joecemar Luiz</i></p> <p>URBAN PRODUCTION TO ADVANCE THE COMPETITIVENESS OF INDUSTRIAL ENTERPRISES <i>Spath, Dieter; Lentens, Joachim</i></p> <p>THE ROLE OF SUPPLY MANAGEMENT AND FUTURE DEVELOPMENT IN FINNISH NATIONAL ECONOMY <i>Kähkönen, Anni-Kaisa; Lintukangas, Katrina; Hallikas, Jukka; Virolainen, Veli Matti</i></p>	<p>ASSEMBLY LINE BALANCING USING EIGHT HEURISTICS <i>Breginski, Rodrigo Bonfim; Cleto, Marcelo Gechele; Sassi Junior, Joecemar Luiz</i></p> <p>ABSENTEEISM/TURNOVER ANALYSIS IN MIXED-MODEL ASSEMBLY LINES <i>Cohen, Yuval; Faccio, Maurizio</i></p> <p>SPAN OF CONTROL IN LONG ASSEMBLY LINES – SEGMENTING THE LINE <i>Cohen, Yuval</i></p>	<p>CONDITION BASED MAINTENANCE IN MANUFACTURING INDUSTRIES: INTRODUCING CURRENT INDUSTRIAL PRACTICE AND CHALLENGES <i>Rastegari, Ali; Salonen, Antti; Bengtsson, Marcus; Wiktorsson, Magnus</i></p> <p>FRAMEWORK FOR SHUTDOWN MAINTENANCE MANAGEMENT <i>Pires, Sandro de Paula; LOURES, Eduardo Rocha; MARÇAL, Rui Francisco Martins; SANTOS, Eduardo A. Portela</i></p> <p>PROJECT MODIFICATION OF THE BODYWORK CONVEYOR SYSTEM FOR INCREASING MAINTAINABILITY <i>Belinelli, Marjorie; Souza, Gilberto; Muller, Lilian</i></p> <p>OVERALL EQUIPMENT EFFECTIVENESS: A REVIEW IN THE CALCULATION METHODOLOGY <i>Tondato, Rogério; Gonçalves, Mirian Buss</i></p>
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10:30 am - 12:00 pm	<p>A PRELIMINARY LITERATURE ANALYSIS OF PRODUCT MODULARITY BENEFITS AND DIFFICULTIES <i>Kubota, Flávio Issao; Gontijo, Leila Amaral; Cauchick Miguel, Paulo A.</i></p> <p>BIBLIOMETRICS TECHNIQUES AND STRUCTURED LITERATURE REVIEW APPLIED TO ECODESIGN <i>Stefano, Nara Medianeira; Garcia Lupi Vergara, Lizandra</i></p> <p>AN OVERVIEW OF THE GENERIC PRODUCT DATA MODEL - GENPDM <i>Martins, Paulo; Sousa, Rui</i></p>	<p>RELIABILITY, MAINTENANCE AND ITS MANAGEMENT: THE CURRENT STATE OF PLAY <i>Fraser, Kym; Gunawan, Janti</i></p> <p>THE ATTRIBUTES OF AUTOMOTIVE RECALL PROCESS: AN EXPLORATORY ANALYSIS IN BRAZILIAN AUTOMOTIVE COMPANIES <i>Silva, Ivan Luiz Laranjeiras; Calarge, Felipe Araujo</i></p> <p>KOHONEN NEURAL NETWORK APPLIED IN THE SENSORIAL CLASSIFICATION OF GELATINS FROM CHICKEN FEET <i>Almeida, Poliana; Alves, Wonder; Farias, Thiago; Santana, José</i></p>		<p>METHODOLOGICAL ISSUES OF THE MASTER PLAN SCHEDULE CONSTRUCTION IN MASS CUSTOMIZATION <i>Giard, Vincent; Sali, Mustapha; Chatras, Clément</i></p> <p>VALIDATION OF A NEW FRAMEWORK FOR MASS CUSTOMIZATION IN BRAZILIAN AUTOMOTIVE INDUSTRY <i>Gazoli de Oliveira, Andre Luiz; Gouvea da Costa, Sergio E.; Pinheiro de Lima, Edson</i></p> <p>FRAMEWORK TO SUPPORT MASS CUSTOMIZED SEMICONDUCTOR PRODUCT DEVELOPMENT <i>Vidor, Gabriel; Breier, Guilherme; Fogliatto, Flavio</i></p> <p>AN INDUSTRIAL PERSPECTIVE ON FLEXIBLE MANUFACTURING: A FRAMEWORK FOR NEEDS AND ENABLERS <i>Norouzilame, Farhad; Grönberg, Magnus; Salonen, Antti; Wiktorsson, Magnus</i></p>	<p>ORDER PENETRATION POINT: A CONTENT ANALYSIS APPROACH <i>Ceryno, Paula Santos; Scavarda, Prof. Dr.-Ing. Luis Felipe; Klingebiel, Prof. Dr.-Ing. Katja; Grossmann, Arnaldo</i></p> <p>MEDIATOR BASED NEGOTIATIONS FOR ORDER ACCEPTANCE DECISION <i>Plya, Sujan</i></p> <p>INTEGRATION OF ENVIRONMENTAL CRITERIA INTO SIMULATION-BASED POSTPONEMENT DECISIONS <i>Cirullies, Jan; Klingebiel, Katja; Scavarda, Luiz Felipe; Ceryno, Paula</i></p>	<p>LOW-EFFORT METHOD FOR QUICKLY DETERMINING THE MOST ECONOMICAL STRATEGY OF MATERIAL PROVISIONING FOR THE DYNAMIC DESIGN OF TRANSFORMABLE ASSEMBLY SYSTEMS <i>Spath, Dieter; Scholtz, Oliver; Schlund, Sebastian; Bender, Manfred</i></p> <p>ON THE SHUFFLING OPERATIONS BEFORE STORAGE: AN ALGORITHM FOR CERAMIC TILES MANUFACTURES <i>Gamberini, Rita; Consoli, Davide; Lollì, Francesco; Rimini, Bianca</i></p> <p>THE MATERIALS MANAGEMENT FOR REMANUFACTURING SHOP FLOOR- CASE STUDY ON AUTOMOTIVE PARTS <i>Golinska, Paulina</i></p> <p>INFLUENCE OF FLEXIBILITY AND INVENTORY ON TOTAL FLOW TIME OF BATCHES IN MANUFACTURING SYSTEMS <i>Palominos, Pedro Ivan; Quezada, Luis; Moncada, German</i></p>	<p>PRODUCTION SCHEDULING IN THE PROCESS INDUSTRY <i>Lindholm, Anna; Giselsson, Pontus; Quttineh, Nils-Hassan; Lidestam, Helene; Johnsson, Charlotta; Forsman, Krister</i></p> <p>A CONE PROGRAMMING APPROACH FOR STOCHASTIC DISASSEMBLY LINE BALANCING IN THE PRESENCE OF HAZARDOUS PARTS <i>Bentaha, Lounes; Battaia, Olga; Dolgui, Alexandre</i></p> <p>SUSTAINABLE APPROACH TO CAPACITY MANAGEMENT IN AGILE MANUFACTURING SYSTEMS <i>Stachowiak, Agnieszka</i></p> <p>PASTURE INTENSIFICATION AND FOREST-LIVESTOCK INTEGRATION: ECONOMIC VIABILITY – BRAZILIAN DAIRY FARM <i>Ozaki, Paulo Moraes; Velazco B., Daniel Marcelo; Carvalho, Thiago Bernardino; Osaki, Mauro; De Zen, Sergio</i></p>
	PDEN 9: Product Design and Engineering 9	QUES 11: Quality, Environmental and Social Issues 11	OSPF 10: Operations Strategy and Performance 10	PSMG 13: Production Systems and Management 13	SCML 10: Supply Chain and Logistics 10	PSMG 16: Production Systems and Management 16	PSMG 19: Production Systems and Management 19
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4:00 pm - 5:30 pm	<p>ROAD STUD THAT IMPROVES THE EFFICIENCY OF LIGHT REFLECTION AND THE DURABILITY OF THE REFLECTIVE SURFACE <i>Kubaski, Evaldo Toniolo; Sequinel, Thiago; Schmidt, Samara; Mandalozzo, Gustavo Ângelo; Tebcherani, Sergio Mazurek</i></p> <p>DESIGN OF EXPERIMENTS: ITS IMPORTANCE IN THE EFFICIENT PROJECT MANAGEMENT. <i>de Souza, João Paulo Estevam; Alves, João Murta; Silva, Messias Borges; Damiani, José Henrique de Sousa</i></p> <p>STRATEGIC DESIGN AND SUSTAINABILITY: LIFE CYCLE ASSESSMENT TO PACKAGINGS <i>Rodrigues, Priscila Westphal; Parode, Fábio Pezzi</i></p>	<p>SOCIAL LIFE CYCLE ANALYSIS – A CASE STUDY <i>Infante, Carlos Eduardo Durange de Carvalho; Botelho, Juliana; Duarte, Sibebe Thaise; Valle, Rogerio</i></p> <p>LIFE CYCLE ASSESSMENT OF CERAMIC MATERIALS <i>Ciaco, Eduardo Francisco Simon; Coutinho, Aparecido Dos Reis</i></p> <p>LIFE CYCLE ASSESSMENT (LCA) OF MICROCOMPUTER <i>Monaro, Daniel Luis Garrido; Miki, André Jun; Coutinho, Aparecido dos Reis</i></p> <p>LIFE CYCLE ASSESSMENT (LCA) AND ECO-INNOVATION <i>Motta, Wladimir Henriques</i></p>	<p>PROPOSITION OF A STRATEGIC MANAGEMENT SYSTEM FOR ENERGY <i>Fenerich, Francielle Cristina; de Lima, Edson Pinheiro; da Costa, Sérgio Eduardo Gouvea</i></p> <p>AN EXPERIMENTAL INVESTIGATION OF MEASURES TO ENHANCE THE ENERGY EFFICIENCY OF CHAIN CONVEYORS AND AUTOMATED STORAGE AND RETRIEVAL SYSTEMS <i>Hoppe, Alexander; Sommer, Tobias</i></p> <p>ENERGY AND COST OPTIMIZATION IN MULTI-MODAL FRESH FOOD DISTRIBUTION NETWORK <i>Battini, Daria; Bortolini, Marco; Faccio, Maurizio; Gamberi, Mauro; Pilati, Francesco; Regattieri, Alberto</i></p> <p>A SOLAR PHOTOVOLTAIC ELECTRICITY INSERT SOURCE IN THE STATE OF PARANÁ/BRAZIL: AN ANALYSIS OF PRODUCTIVE POTENTIAL <i>Tiepolo, Gerson Maximo; Urbanetz Junior, Jair; Canciglieri Junior, Osiris</i></p>	<p>APPLICATION OF EXPERT SYSTEMS TO DEVELOPMENT OF MODEL OF ASSESSMENT OF PRODUCTION AND LOGISTICS SYSTEM <i>Cyplik, Piotr Seweryn; Hadas, Lukasz; Fertsch, Marek</i></p> <p>APPLICATION OF CURVATURE-BASED DESCRIPTORS FOR FAULT DIAGNOSIS IN SUCKER ROD PUMPING SYSTEM <i>Reges Júnior, Galdir Damasceno; Schnitman, Leizer; Reis, Ricardo Andre</i></p> <p>ORDER ACCEPTANCE AND SCHEDULING OF RUSH ORDERS <i>Trzyna, Daniel; Lödding, Hermann</i></p>	<p>VEHICLES ROUTING: IMPLEMENTATION AND IMPROVEMENT OF CLARKE AND WRIGHT METHOD <i>Lima Junior, Paulo Cesar Rodrigues; Gama, Mateus Brito; Silva, Ana Cristina Gonçalves Castro; Carvalho, Jose Luiz Moreira; Silva, José De Castro; Matos, Amanda Góes</i></p> <p>EXPERIMENTAL VALIDATION OF FMS ROUTING AND DISPATCHING POLICIES USING SIMULATION <i>Sormaz, Dusan; Miller, Ryan; Patel, Chintankumar</i></p> <p>A SIMULATED ANNEALING ALGORITHM FOR THE VEHICLE ROUTING AND SCHEDULING PROBLEM <i>Mejia, Gonzalo; Cendales, Oriana; Méndez, David; Casallas, Rubby</i></p>	<p>STRATEGIC OPTIMIZATION OF FUTURE MANUFACTURING PROCESS WITH GRAFEM, TECHNOLOGY ROADMAPS AND SCENARIOS TECHNIQUE <i>Prof. Dr.-Ing. Grienitz, Volker; Hausicke, Michael</i></p> <p>THE STUDY ON ANALYSIS OF PRODUCTION FLOW EFFICIENCY FOR FACTORIES IN DIVERSIFIED PRODUCTION CIRCUMSTANCE <i>Nakayama, Kagehisa; Ryu, Sung-Jin; Onari, Hisashi</i></p> <p>A NEW MATERIAL FLOW CONTROL MECHANISM BASED ON CWIPL FOR JOB SHOP <i>Nahavandi, Nasim</i></p>	<p>EXPLORING OPTIMAL FLEXIBLE ASSEMBLY SYSTEM <i>Asadi, Narges; Fundin, Anders; Jackson, Mats</i></p> <p>IMPROVING PROCESSES ON THE BASIS OF A SHORT CYCLIC IMPROVEMENT ROUTINE, VALUE STREAM MAPPING AND A PROCESS MANAGEMENT SYSTEM <i>Kuhlang, Peter; Hempten, Sabine; Sih, Wilfried; Deuse, Jochen</i></p> <p>APPLYING STANDARD WORK IN A PAINT SHOP OF WOOD FURNITURE PLANT: A CASE STUDY <i>Ribeiro, Luis; Alves, Anabela; Moreira, Francisco; Ferreira, Mário</i></p> <p>THE ROLE OF TEIANS AND QCCS IN IMPLEMENTING KAIZEN <i>Ma, Jie; McGovern, Tom; Hicks, Christian</i></p>

## **ERRATUM**

### **NEW PRESENTATIONS**

#### **AN ANALYSIS OF INDUSTRIAL NETWORKS FOR REMANUFACTURING IN BRAZIL**

*Guidat, Thomas; Barquet, Ana Paula; Zorzal dos Santos, Julio Augusto; de Oliveira Gomes, Jefferson; Rozenfeld, Henrique; Seliger, Günther; Taís, Hamamoto*

ST SCML 13

#### **A DYNAMIC INVENTORY MODEL WITH SUPPLIER SELECTION IN A SERIAL SUPPLY CHAIN STRUCTURE**

*Golany, Boaz; Ventura, José A.; Valdebenito, Victor A.*

ST SCML 13

#### **MANUFACTURING SYSTEMS FOR AUTOLOGOUS REGENERATIVE MEDICINE PRODUCTS**

*Cohen, Paul H.; Persur, Molly; Prim, Peter; Carr, Sean; Wysk, Richard; Shirwaiker, Rohan; Atala, Anthony; Yoo, James*

ST PTEC 1

### **PRESENTATIONS REPLACED**

#### **IMPROVING PROCESSES ON THE BASIS OF A SHORT CYCLIC IMPROVMENT ROUTINE, VALUE STREAM MAPPING AND A PROCESS MANAGEMENT SYSTEM**

*Kuhlang, Peter; Hempen, Sabine; Sihm, Wilfried; Deuse, Jochen*

FROM PSMG 19 TO PSMG 14

#### **MANAGEMENT SYSTEMS AND GOOD PRACTICES IN THE SUSTAINABLE SUPPLY CHAIN MANAGEMENT**

*Ching, Hong Yuh; Anderson, Mayco*

FROM SCML 6 TO SCML 4

#### **USING DISCRETE EVENT SYSTEM CONCEPTS IN SUPPLY CHAIN MANAGEMENT COMPOSED BY THREE PRODUCTION LEVELS SUBJECT TO UNCERTAINTY**

*Pacheco, Eduardo De Oliveira; Lüders, Ricardo Lüders; Delgado, Myriam Regattieri*

FROM SCML 12 TO SCML 15

#### **APPLICATION OF BAYESIAN NETWORKS TO PREVIEW APPLIANCES' NPD TIME TO MARKET**

*Barros, Marcos Vinicius; Possamai, Osmar; Oliveira Dalla Valentina, Luiz Veriano; Oliveira, Marco Aurelio*

FROM QREN 3 TO QREN 1

**NO-SHOWS**

✚ **July 29th**

**TELEWORK AND MANAGEMENT: TECHNOLOGY FOR A MORE SUSTAINABLE ENVIRONMENT**

*Basso, Ricardo Fonte; Battistelli, Rosane Aparecida Gomes; Cavenaghi, Vagner*

ST QUES 3

✚ **July 30th**

**RATIONAL USE OF IDLENESS IN MANUFACTURING CELLS**

*Coppini, Nivaldo Lemos; Lourenço, Wilson da Silva; de Souza, Edson Melo; Hassui, Amauri; Carvalho, Alexandre Augusto Martins*

ST PSMG 2

**LEVERAGING RADIO FREQUENCY IDENTIFICATION (RFID) TECHNOLOGY IN A CLASSROOM ENVIRONMENT**

*Uzochukwu, Benedict Madu; Eyob, Ephrem; Twine, Eric; James, Travon; Simpson, Jessica*

ST TIKM 2

**A FUNDAMENTAL STUDY ON POLICY DEVELOPMENT FRAMEWORK IN AUTO INDUSTRY CLOSED LOOP SUPPLY CHAIN**

*Eryuruk, Sule; Sun, Jing; Kato, Tomoyuki; Tokumaru, Norio; Koshijima, Ichiro*

ST SCML 13

**FUNDAMENTAL STUDY OF TECHNOLOGY-PRODUCT-BUSINESS INNOVATION CHAIN USING EVOLUTIONARY GAME THEORY**

*Kato, Tomoyuki; Nishida, Ayako; Koshijima, Ichiro*

ST TIKM 6

✚ **July 31<sup>th</sup>**

**REORGANIZATION AND LEAN IN A KANBAN INVENTORY: A CASE STUDY**

*Siqueira Martins Domingos, Bianca; Batista Ribeiro, Rosinei; Medeiros de Barros, José Glênio; Henriques Araújo, Antônio; Tavares Matias, Nelson; Gonzaga, Marcelo*

ST SCML 15

**AN OVERVIEW OF THE GENERIC PRODUCT DATA MODEL - GENPDM**

*Paulo Martins, Rui Sousa*

ST PDEN 8

**SESSION RESCHEDULED**

Session Technic **OSPF 9** rescheduled from Tuesday, July 30<sup>th</sup> - 8:30am - 10:00am at Atlantico room to Monday, July 29<sup>th</sup> 2:00pm - 3:30pm at Pacifico room

# IMPROVING PROCESSES ON THE BASIS OF A SHORT CYCLIC IMPROVEMENT ROUTINE, VALUE STREAM MAPPING AND A PROCESS MANAGEMENT SYSTEM

Abstract ID: PSMG10043

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## Abstract

A Process Management System in general represents is a suitable approach to improve processes in the broadest sense. For this improvement a lot of established concepts and methods are applied practically and are depicted in literature. In most cases these improvement attempts between the different levels are not linked methodically. This paper presents and combines three – broadly practically applied and theoretically well described - approaches out of the broad variety of concepts and methods to improve value streams. Within this framework value stream mapping and the short-cyclic improvement routine are integrated into the organisational framework of process management in order to enable a methodically fostered improvement of value streams in different levels of detail. Therefore an advanced and sustainable continuous improvement process is enabled. Hence the objective of this paper is to link these industrially applied concepts for managing and improving value streams usefully, and to depict this linkage in an extended model and a practical assembly example.

## Keywords:

continuous improvement, value stream mapping, process management

## 1 INTRODUCTION

Enterprises face the task of managing, designing and improving their processes in the broadest sense – so from the main processes down to the operative (work-) methods – on a daily base. For this purpose a lot of established concepts and methods are applied practically and are depicted in literature. In most cases these improvement attempts between the different levels are not linked methodically. For example, a consistent exchange of information and data between different improvement attempts does not take place.

Out of this the following questions respectively presentations of the problem are derived. How can different improvement attempts within different levels of a value stream be combined usefully? How can value streams be managed, designed and improved in a structured and repeatedly recurring way?

A Process Management System in general represents a suitable approach to improve processes in the broadest sense. This paper presents and combines three – broadly practically applied and theoretically well described - approaches (Process Management, Value Stream Mapping and a systematic routine to manage and improve processes) out of the broad variety of concepts and methods to improve value streams.

Hence the objective of this paper is to link these industrially applied concepts for managing and improving value streams usefully, and to depict this linkage in an extended model.

## 2 FUNDAMENTAL PRINCIPLES TO CHANGE PROCESSES

A process, that has once reached a certain level of performance, is likely to lose that level in a natural way. Improvements to push processes to a higher performance level can be achieved by innovation (volatile changes) and continuous improvement (short-cyclic changes) [1], [2]

Innovation usually means a radical improvement with crucial changes. Innovation leaps are discontinuous, often initiated by strategic decisions and are usually highly

complex and interdisciplinary. Continuous improvement from a current-condition to a target-condition is characterised by a lot of small, short-cyclic (univariat) improvement steps in the specific processes. Both principles need a different amount of time and both should be utilised in organisations.

## 3 DEFINITIONS AND CONFINEMENT OF PROCESS AND VALUE STREAM

Processes have inputs and outputs that confine a process to the contiguous processes (upstream and downstream) and they fulfill the process purpose. The input (to be considered as an activated incident), the actual process flow and the required resources as well as the output (outcome) are basic parameters to define a process. Processes are defined as timely and, with regard to content, completed sequence of activities [3] [4]

From a process-oriented point of view there is no fundamental difference in understanding of what a “process” or what a “value stream” is. In terms of this paper a value stream is in most cases a product-oriented flow or extract of processes on a higher level of detail. A value stream may contain different processes from the Process Map or main- as well as sub- processes from “deeper” levels of detail which affect the production of a product. The value stream itself consists of operative processes and the appertaining material and information flows. A value stream includes all activities, i.e. value adding, non-value adding and supporting activities that are necessary to create a product (or to render a service) and to make it available to the customer. This includes the operational processes, the flow of material between the processes, all control and steering activities and also the flow of information. [5]

## 4 STANDARDISATION

A lot of companies are interpreting standards related to production processes often in a way to stabilise process conditions on the achieved level of performance, or to harmonise different processes. Based on this “best

practice” definition standards remain static and they should last as long as possible [6] This interpretation of a standard prevents a target-oriented advancement of processes [7] [9] Lenzian, Schneider and Deuse, 2009). On the contrary innovative approaches are interpreting a standard as a target-condition to differ intentionally from the current-condition. This differentiation causes the fundament for target-oriented process improvements by reducing the difference between the current-condition and the particular standard (target-condition) [9]

## 5 TARGET-CONDITIONS AND ROUTINES TO SYSTEMATISE IMPROVEMENTS OF PROCESSES

The short-cyclic improvement routine proposes, starting from a current-condition, the specification of a target-condition, which should be achieved and is oriented to an ideal-state. The target-condition describes “how” a process should be performed in the future. It also can be considered as a milestone along the way to the ideal-state. The ideal-state is like a navigation point (“true north”) or like an aid to orientation for the definition or specification of the several different target-conditions for the processes. [1], [7], [10]

The management is responsible either for defining the ideal-state as well as the several target-conditions as well as for coaching the operatives employees during aspiring and accomplishing the target-conditions. Examples for parameters describing an ideal-state are 100% added value, one piece flow, zero-defects, lack of impairment for the workers.

A particular target-condition is specified in detail by targets and parameters describing the process. Targets are for e.g. productivity (in terms of “performance/time unit”) or quality (“failure-free parts/total parts”). The actual- and the target-condition of the process are specified for example by parameters or indicators like cycle times (customer takt), deviation, applied (work-) method, work in progress in the particular work system, or specifications considering the layout or organisational aspects. In order to formulate motivating target-conditions, for all engaged workers, they have to be realistically attainable and demanding. [11]

Against the background of these principles Rother formulated ideas and procedures of the improvement- and the coaching-kata. [12](Rother, 2009)

“Kata” describes a specified routine, a pattern or a habitual thinking and acting. These very often repeated routines of the improvement and the coaching kata are fundamental for the systematisation of improving processes.

Figure 1 shows the routine to support process improvements and consists of the following steps:

1. Orientate towards the ideal-state and definition of target-conditions.
2. Compare current to target-condition.
3. Identify problems and obstacles systematically.
4. Formulate and try one action to solve the main problem (hypothesis and experiment).
5. Interpret and evaluate the results.

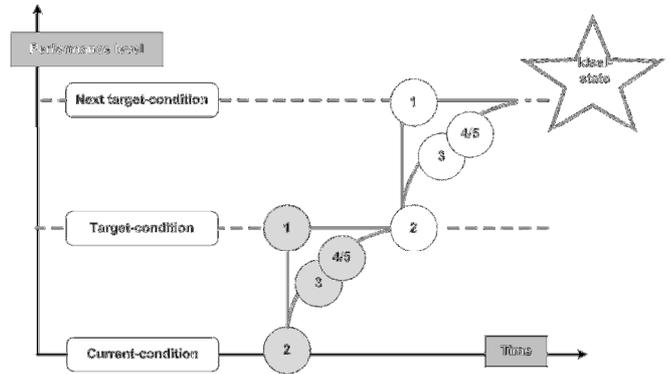


Figure 1: Routine to improve processes based on hypothesis and experiments [6]

## 6 VALUE STREAM MAPPING

VSM was originally developed as a method within the Toyota Production System. [13] [14].

It was first introduced as an independent methodology by Mike Rother and John Shook. VSM is a simple, yet very effective, method to gain a holistic overview of the condition of the value streams within an organisation. Based on the analysis of the current-condition, flow-oriented target value streams are planned and implemented. [5] [15] [16]

By defining target-conditions, VSM uses a 4-Step-Method consisting of the steps “choose a product family”, “draw a current-condition map”, “develop a target-condition” and “implementation of target-condition” as well as an “action plan” to monitor the implementation, to describe necessary actions and activities (what, by whom, until when) to improve the value stream.

## 7 PROCESS MANAGEMENT

Process Management (PcM) causes a sustainable improvement of working procedures in the organisational structure.. Process Management is the combination of activities which include the planning and monitoring of a process. It also is the application of knowledge, skills, tools, techniques and systems to define, visualise, measure, control, report and improve processes with the goal to meet customer requirements. The core concept in the PcM concept is the Process Life Cycle (PLC) (see Figure 2).

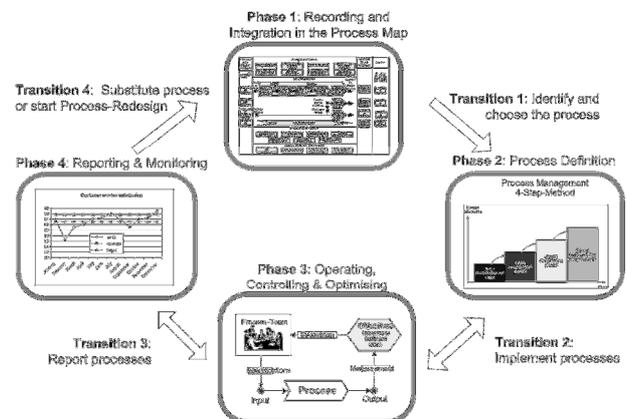


Figure 2: Basic principle of the Process Life Cycle [4]

The Process Life Cycle indicates and determines each stage of the life cycle of a process within a Process Management System. It starts with the incorporation of the process into the process map and it ends with the shutting

down of the process. The Process Life Cycle defines steps in the cycle of a process in the Process Management System in form of phases and phase transitions and is named the “large control-circuit” in PcM. Phase 1 “Recording and Integration in the Process Map” and phase 2 “Process Definition” represent the design and conception of processes. Phases 3 “Operating, Controlling and Optimising” as well as phase 4 “Reporting and Monitoring” specify the recurring (“daily”) work of performing and improving processes.

In phase 2 the 4-Step-Method is a vital procedure to define new processes and to change and improve already existing processes. The 4-Step-Method of PcM is applied if a new process has to be defined based on identified improvement potentials. The 4-Step-Method (see Figure 2) is a general approach in PcM and it consists of the four steps “identification and scope”, “analyse actual process”, “design target process” and “implementation of improvements” [4]. The four steps are implemented by a series of – at least – four so-called Process Team Meetings (PTM). Each PTM represents a milestone during a step to ensure the systematic execution of the 4-Step-Method.

The so-called Process Jour Fixe (PJF) meetings are instruments for a continuous control of a process in phase

3 and during the transition to reporting and monitoring in phase 4. During phase 3 – representing the so-called “daily life of a process” – the focus is set on meeting the requirements and on identifying and realizing improvement actions, short-cyclically, towards a target-condition.

The reporting and monitoring of different processes and several process goals occur in phase 4. Thus, the information available in phase 2 and phase 3 is broadened by relevant, respectively strategic parameters and aspects. All relevant information and performance indicators as well as actual problems in the daily life of the process are conditioned prior to a Process Management Review (PMR). Therefore they are also available for the PJF and the PTM in order to accomplish successful decision making and to provide the basis for the deduction of necessary improvement actions. [4]

## 8 VALUE STREAM ORIENTED PROCESS MANAGEMENT – THE SYSTEMATISATION OF VSM

Process Management provides the organisational framework for the systematisation of VSM. This is based on embedding and integrating a values stream into phases 2 to 4 of the PLC (see Figure 3).

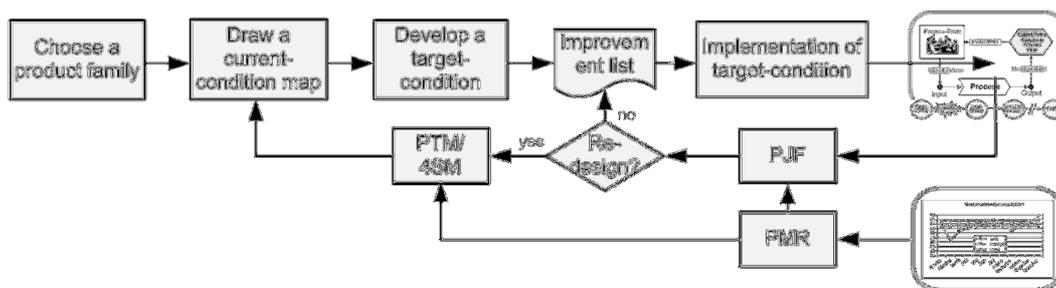


Figure 3: Procedure to systematise VSD

The general approach in solving the systematisation of VSM is the conjunction of volatile and short-cyclic improvements of a value stream. This conjunction of continuous improvement and innovation can be found in the PcM-System, in phase 2 and 3 of the Process Life Cycle. The determination of target-conditions (during phases 2 to 3 utilising information from phase 4) endorses the PLC by setting clearly defined intermediate target-condition along the way to the ideal-state. The following sections describes how a particular value stream is systematically comprehended, analysed, changed in great and short steps, operated and controlled in this changeover of the phases (see Figure 4).

### 8.1 Volatile changes

Referring to the level of the value stream in phase 2, where the two 4-Step-Methods in PcM or VSM are applied, the current-condition at point in time  $t_0$  is recorded and a challenging target-condition is determined along the way to the ideal-state. This target-condition “target 1” is defined during step 3 of PcM’s 4-Step-Method and is afterwards implemented and aspired in step 4.

The implementation is accomplished by realising improvement actions summarized in the LIP or the action plan taking economic, organisational and time-related constraints into consideration. In phase 2 of the

PcM volatile and conceptual changes occur on the level of the whole value stream. From a theoretical point of view the target-condition “target 1” of the now changed value

stream is accomplished at point in time  $t_1$  at the end of step 4. This attained condition at point in time  $t_1$  becomes automatically the new current-condition at point in time  $t_1$  – independent of whether the desired level has been reached or not – for the following phase of continuous improvement (phase 3).

### 8.2 Continuous, short-cyclic changes

The most noted and practically applied method is the PDCA (Plan-Do-Check-Act)-method. The PDCA-method formalises an experimental procedure as a scientific method. Due to the complexity and variability of a system it is eminently important to establish systematic and steady elapsing procedures for improvement. In order to establish and to maintain a short-cyclic improvement process in phase 3, it is necessary to implement a structured procedure within the business organisational structure. The short-cyclic improvement has to take place with a high frequency to implement and settle changes in the processes. Concerning this, the applied methodical approach of univariate experiments is therefore anchored as an integrated routine in the daily operation of the business. Due to the fact that the kata is an appropriate method of improving and coaching activities, this systematic routine for improving processes is introduced here as the basis for continuous improvement, and enlarges and consolidates the already applied approaches and concepts (e.g. LIP, PJF, PMR) in phase 3 of the PLC. The coaching routine aims to guide and to enhance the particular workers in applying the improvement routine

(PDCA-cycles). Hereto the person has to be asked, guided and encouraged repeatedly to identify obstacles within the borders of the process and has to remove them by univariate PDCA cycles (rapid PDCA's) instead of trying to search for solutions at the processes' interfaces, or outside of the process as it is common practice. On the one hand the accompanying coaching ensures the compliance of the prescribed (work-) methods in the work systems by different workers, and on the other hand it ensures that all

possible actions for improvement within a process are actually taken into consideration.

### 8.3 Stabilisation after volatile changes

Ideally and typically, the performance of a process respectively a value stream stabilises after reaching a new performance level. Nevertheless, a decline from this performance level is the reality. As a result it is more or less impossible to attain both a target-condition and a sustainable stabilization at the end of phase 2

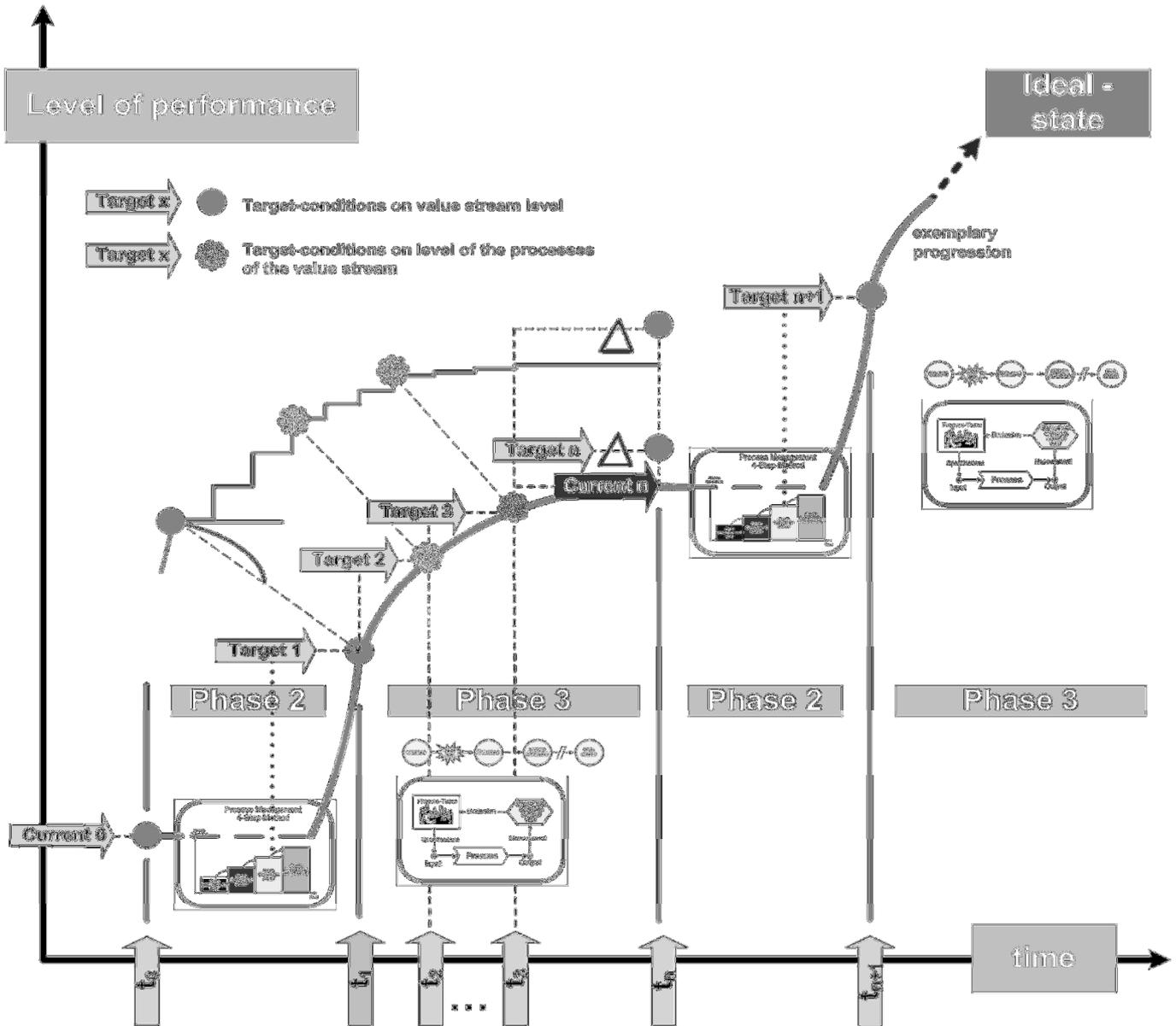


Figure 4: Systematic improvement of a value stream in the Process Life Cycle

### 8.4 Renewed volatile changes

A long lasting continuous improvement usually leads to diminishing changing steps. Despite the coaching procedure and all the improvement endeavours it may occur that the target-conditions cannot be accomplished within the scope of the process borders. On the one hand this may be a reason for determining a too short a time frame for accomplishing "target n". In this case the frame may be extended and the improvement efforts in phase 3 within the process borders will continue. On the other hand in particular the non-attainment of the target-condition in phase 3 mainly occurs if the major, still existing, obstacle

cannot be found between the processes or if it is beyond scope of action of the shift leaders. Hence it is imperative to initiate another innovation leap in order to improve the value stream in phase 2 across its process borders and to determine a new, challenging target-condition "target n+1" at point in time  $t_{n+1}$ .

### 8.5 Ongoing Monitoring

Phase 4 of the Process Life Cycle is crucial for the development of a value stream – no matter if there are small steps or innovation leaps. The actual performance data of the value streams and current information concerning the organization (e.g. key performance

indicators) and the external influences are collected for the PMR. In this way the information is available for the PTM and PJF as well.

Process Management Reviews help to make the performance level of value streams assessable and controllable. They provide the basis to decide if a re-design of a value stream is necessary and to set certain targets for the improvement projects. This swinging back and forth between different conditions of a Process Life Cycle also represents the connection between volatile changes and continuous improvement steps.

**9 PRACTICAL EXAMPLE**

A pump manufacturer with a high variant model-mix production is improving value streams and their operative. At the time of the analysis of the current-condition the amount of inventory was directly dependent from the demand planning and had - during a longer period of time - an irregular inflow and outflow. The assignment of the material in the inventory area of the work system was not visualised and worked out only due to the experience of the workers. The total lead time for A-parts was more than 20 days and the value adding time was a few minutes only and these parts were stored between pre- and final assembly between four to five days.

Based on the analysis of the current-condition a target-condition was worked out orientated towards 100% value adding and no idle times, elements of the already defined ideal-state. In the future the loading and removal of the parts will be organised based on the FIFO (First in First out) principle. In addition the target-condition was specified by a target-inventory of two hours (see Figure 5).

These goals lead to several needs for action, which were figured out during the 4-Step-Method of PcM in phase 2 and were documented in the LIP. The improvements refer to the reorganisation of the inventory area of the work system including the visualisation, to the development of the control of the material and information flow between the processes from push to pull and also to a reduction of the cycle times of the adjacent processes. Each of these points for improvement confines an enclosed framework for action and a defined target-condition and each should be attained during phase 3. The defined target-conditions require both a short-cyclic improvement within the processes as well as a volatile change in the value stream. Within the processes the focus is set on a short-cyclic

processes covering a large part of the production using the improvement and coaching kata. Within the scope of the improvement routine the shift leaders in the production are responsible to improve the processes “pre-production”, “pre-assembly” and “final assembly” within the determined borders of the processes. The processes have to be stabilised referring to customer takt (Cycle time) and the productivity has to be increased. An entire synchronisation of pre- and final assembly is not possible in the given situation due to technological framework conditions and cannot be realised based on a short-cyclic improvement procedure. This is why inventory is required between the processes in order to ensure delivery reliability.

synchronisation of the cycle times (see Figure 6). Within the value stream the volatile change is kept on implementing a new material and information flow.

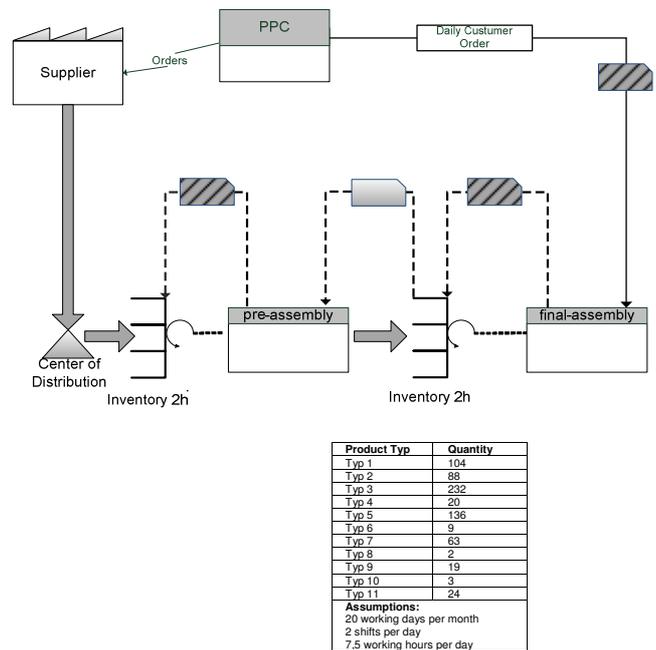


Figure 5. Target value stream focussing the interface between pre- and final-assembly

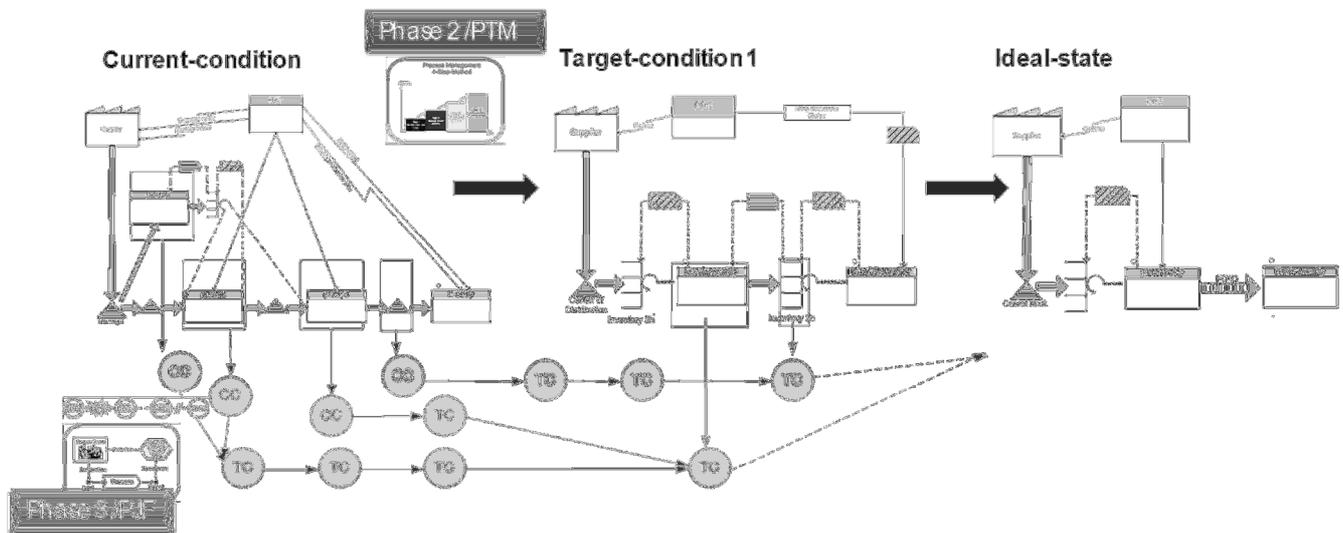


Figure 6. Short-cyclic and innovation leaps from current-condition to target-condition and ideal-state

## 10 SUMMARY AND OUTLOOK

This paper presents the linkage of these industrially applied concepts for managing and improving value streams in an extended model and equally it points out, that target-conditions for processes have to be derived from the target value stream. The short-cyclic improvement routines ensure an ongoing improvement of processes towards the ideal-state due to the determination and attainment of intermediate target-conditions. This determination and attainment of target-conditions based on short-cyclic improvement steps is recommended for the recurring ("daily") work of performing and improving processes in order to enhance phase 3 of the PLC. These "one-factor-experiments" develop processes towards their targets based on formulating hypothesis and performing experiments. Further research activities considering these issues are currently running. First practical experiences in applying the model show clear evidence to transfer the functions of real organisation precisely to those of the model.

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