



22/23/24 June 2022
Nantes, France

ON MANUFACTURING MODELLING,
MANAGEMENT AND CONTROL

**10th IFAC CONFERENCE ON
MANUFACTURING MODELLING, MANAGEMENT AND CONTROL**
New challenges for management and control in the Industry 4.0 era
Hybrid conference – June 22-24, 2022, Nantes, France

Closing Ceremony



Pr. Dmitry Ivanov, IPC Chair

Belin School of Management and Low, Germany

Pr. Alexandre Dolgui, General chair

IMT Atlantique, France

Pr. Alain Bernard, Vice-general chair

Centrale Nantes, France

Pr. David Lemoine, NOC chair

IMT Atlantique, France

Chair IFAC Technical Committee (TC) 5.2 Management and Control in Manufacturing and Logistics

IPC Chair IFAC MIM 2022

Prof. Dr. Dmitry Ivanov
(Berlin School of Economics and Law)

General Conference Chair

Professor
Alexandre Dolgui
(France)



Chair International Program Committee

Professor Dr
Ivanov
(Germany)



International Program Committee

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Wilhelm Bauer	Anton Ereemeev	Andrea Matta	Jörn Schönberger	
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Jennifer Blackhurst	Yeming Gong	Laszlo Monostori	Kathryn Steckle	
Marcus Brandenburg	Eric Grosse	Benoit Montreuil	Kathryn Steckle	
Bruno Castanier	Stephen C. Graves	Dimitris Mourtzis	Joao Sousa	
Felix T.S. Chan	Christelle Gueret	Josefa Mula	Srinivas Talluri	
Vincent Chapurlat	Angappa Gunasekaran	Rakesh Nagi	Chris Tang	
Weiwei Chen	Surendra M. Gupta	Andrew Nee	Lixin Tang	
Vincent Cheutet	Nikolai Guschinsky	Shimon Y. Nof	Marco Taisch	
Tsan-Ming Choi	Oleg Gusikhin	Sylvie Norre	Manoj Tiwari	
Chengbin Chu	Richard Hartl	José F. Oliveira	Caroline Thierry	
Feng Chu	Dmitry Ivanov	Hervé Panetto	Damien Trentesaux	
George Chryssolouris	Benoit lung	Bernard Penz	Agostino Villa	
	Jayanth Jayaram	François Pérès	Fei-Yue Wang	
	George Q. Huang	Michael L. Pinedo	Lihui Wang	

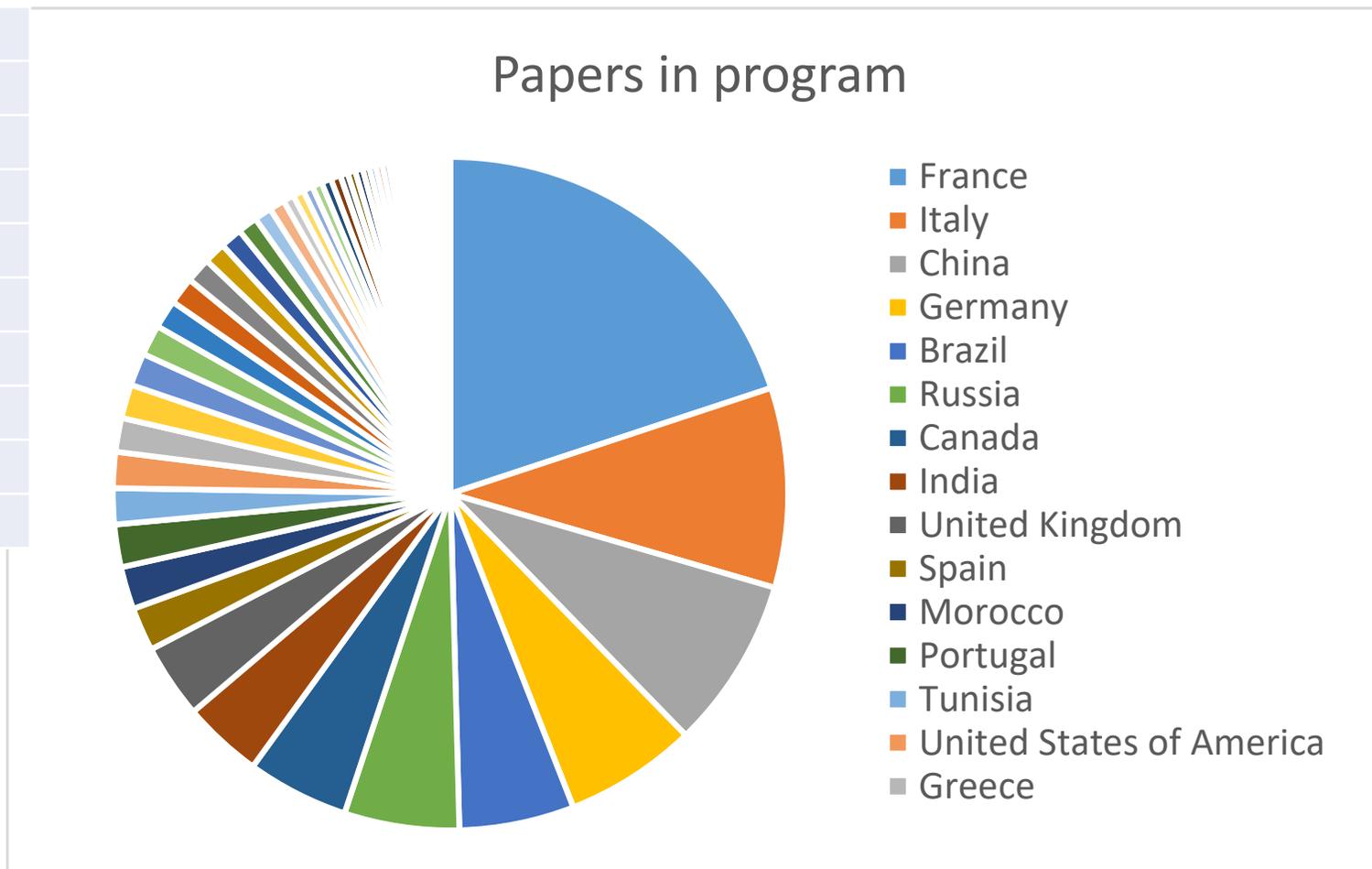
113 members from 28 countries

MIM 2022 Scientific Program

Number of submissions	806 from more than 70 countries
including Track and Session Proposals	78
Accepted papers	544
Acceptance rate	75%
Number of sessions	125
Number of authors in program	1908 from 68 countries
Number of reviewers	837 reviewers
Number of registered participants	767

Corresponding authors of the papers in the program are from 68 countries

France	380
Italy	183
China	157
Germany	121
Brazil	105
Russia	105
Canada	93
India	73
United Kingdom	68
Spain	40





- Prof. David Simchi-Levi (MIT, USA): **From Data to Science and Back**



- Prof. Mike Pinedo (NY Univ, USA): **Scheduling Applications in Industry – Steelmaking and Micro-electronics**



- Prof. Dimitris Mourtzis (U. Patras, Greece): **Artificial Intelligence for Production Management and Control towards Mass Personalization in Industry 4.0**



- Prof. Volodymyr Babich (Georgetown U., USA): **Playing with DISASTER: a Behavioral Simulation Platform of Supply Shortages, Competition for Supplier Capacity, Blockchain-enabled Strategic Information Sharing, and Markets for Capacity-Token Trading**



- Prof. Gisela Lanza (KIT, Germany): **Enabling changeable production by utilizing digital twins**



- Prof. Alain Bensoussan (Hong Kong): **Major challenges of Risk Management in Industry**

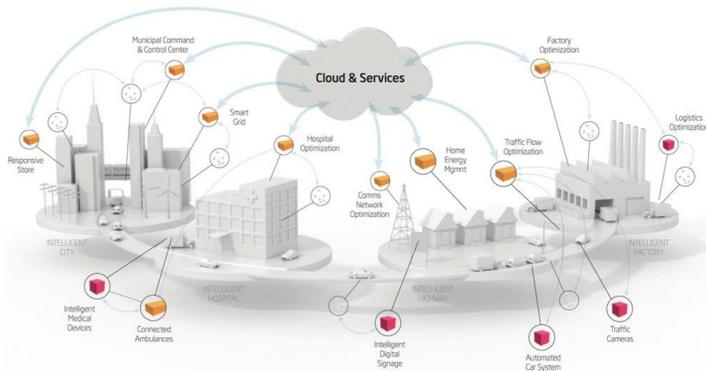
General chair of conference

Prof. Dr. Alexandre Dolgui
(IMT Atlantique, France)

The Department Automation, Production and Computer Sciences (DAPI) of IMT Atlantique, campus in Nantes, France

DAPI is composed of 3 groups (44 Faculty members):

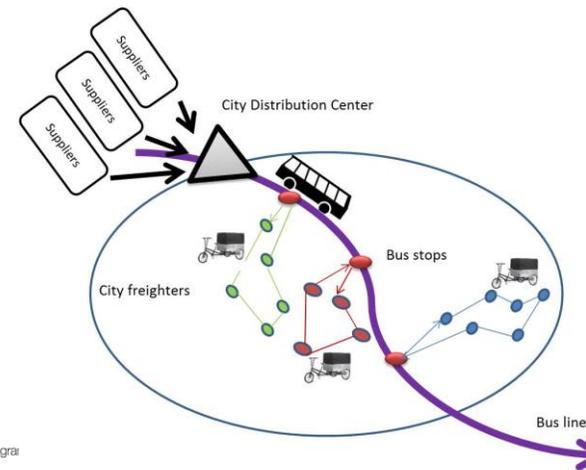
- Software Engineering and Distribution
- Optimization and Decision Aid
- Robotics, Control and Interactions



An Open-Source java library for constraint programming

Choco solver

Choco is a Free Open-Source Java library dedicated to Constraint Program



The Program is still available on:

https://ifac.papercept.net/conferences/conferences/MIM22/program/MIM22_ProgramAtAGlanceWeb.html

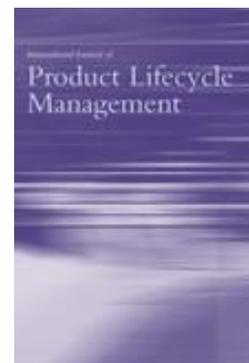
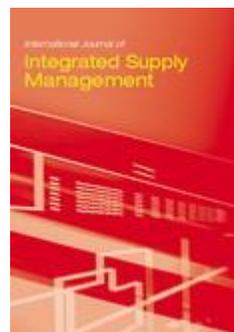
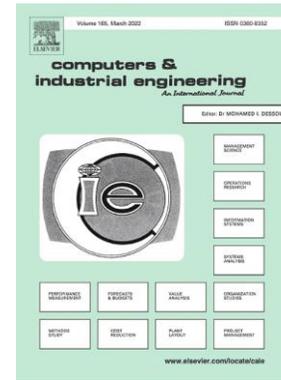
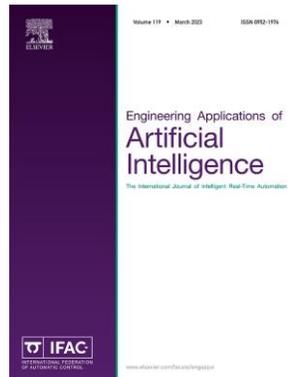
**The Proceedings were published by Elsevier
in IFAC-PapersOnline**

<https://www.sciencedirect.com/journal/ifac-papersonline/vol/55/issue/10>

The articles are in open access and with DOI



Post-conference publications in journals (special issues were announced, the submissions of selected articles are in progress)



algorithms
an Open Access Journal by MDPI

Vice-general chair

Prof. Dr. Alain Bernard
(Centrale Nantes, France)

President of National Organizing Committee (NOC)

Prof. Dr. David Lemoine
(IMT Atlantique, France)

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 Audrey Derrien
 Oussama Djedidi
 Alexandre Dolgui
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 Mihalis Giannakis
 Evgeny Gurevsky
 Ramzi Hammami
 Seyyed Ehsan Hashemi Petroodi
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Secretaries (assistants)

Mrs Barbara RIERE

Mrs Aurore GUILLON

Mrs Catherine FOURNY

Mrs Joy VAVASSEUR

Thank you very much!



Conference Awards:

Commended Paper Award

Young Author Award

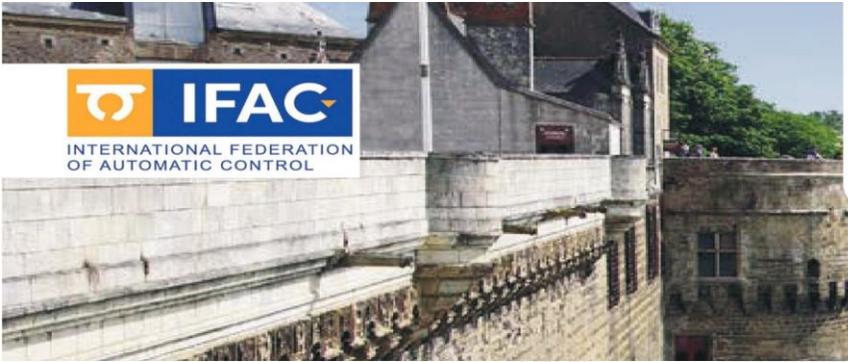
Best Application Paper

Best Paper

Award Committee:



Commended Paper Award



Commended Paper Award

Schamp Matthias, Demasure Thibaut, Huysentruyt Stijn,
Lamote Jan, Aghezzaf El-Houssaine & Cottyn Johannes

For the paper titled

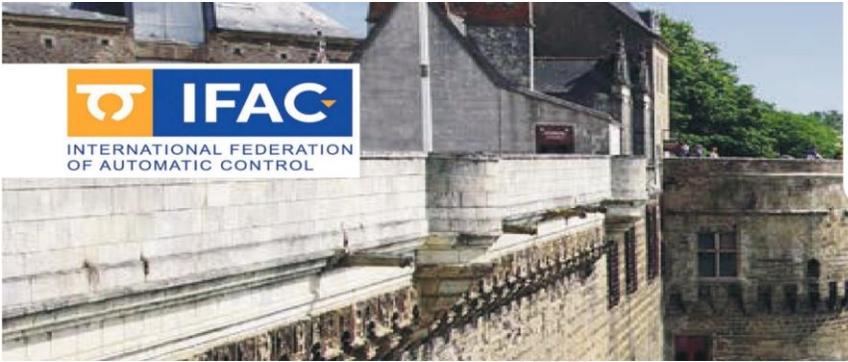
**Multi-level Approach to Virtual Commissioning: A
Reconfigurable Assembly System Case**

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

Alexandre Dolgui
Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair



Commended Paper Award

Mourtzis Dimitris, Angelopoulos John & Panopoulos Nikos

For the paper titled

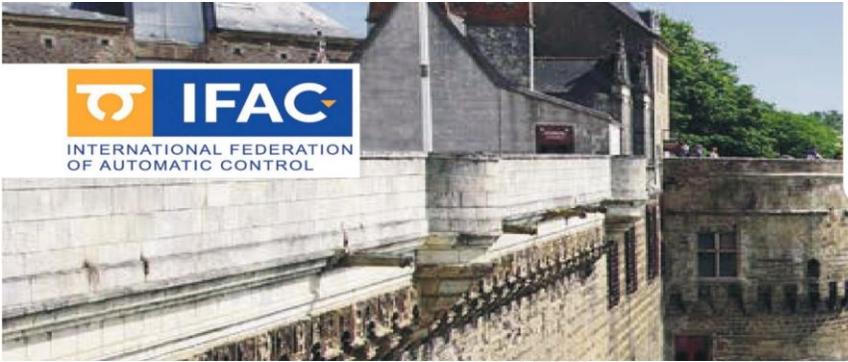
**Unmanned Aerial Vehicle (UAV) Manipulation Assisted
by Augmented Reality (AR): The case of a drone**

Presented at the IFAC MIMS2022 Conference
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Dmitry Ivanov
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David Lemoine
NOC Chair



Commended Paper Award

Liu Ming, Tang Hao, Chu Feng, Zheng Feifeng & Chu Chengbin

For the paper titled

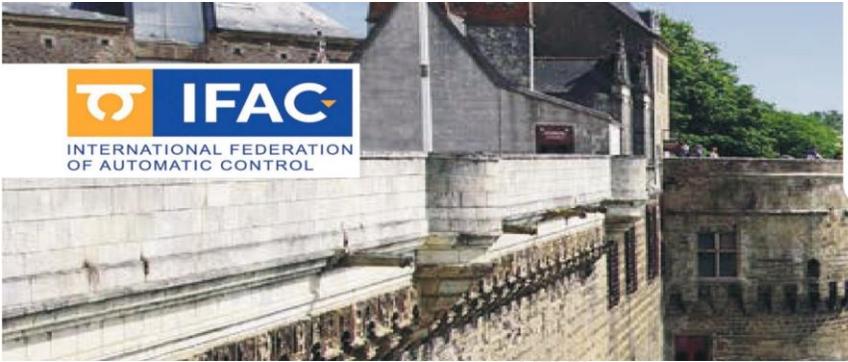
**A Reinforcement Learning Variable Neighborhood Search
for the Robust Dynamic Bayesian Network Optimization
Problem Under the Supply Chain Ripple Effect**

Presented at the IFAC MIMS2022 Conference
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Conference Chair

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NOC Chair



Commended Paper Award

Kosasih Edward & Brintrup Alexandra

For the paper titled

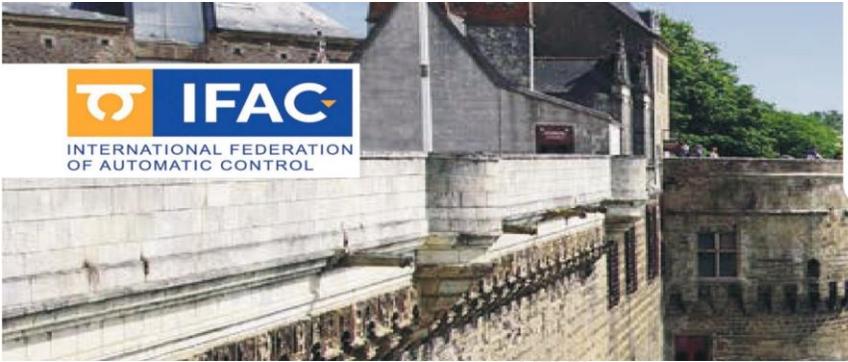
**Reinforcement Learning Provides a Flexible Approach
for Realistic Supply Chain Safety Stock Optimisation**

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

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Conference Chair

Dmitry Ivanov
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David Lemoine
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Commended Paper Award

Grassi Andrea, Guizzi Guido, Santillo Liberatina Carmela,
Vespoli Silvestro & Arlinghaus Julia

For the paper titled

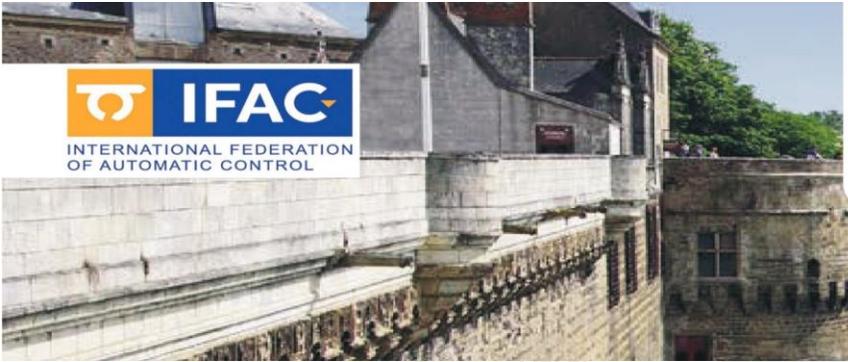
**On the Development of A Blockchain-implementable
Intermediation Model for Digital Supply Chains**

Presented at the IFAC MIMS2022 Conference
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Alexandre Dolgui
Conference Chair

Dmitry Ivanov
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David Lemoine
NOC Chair



Commended Paper Award

**Alvim Silvio Luiz, Viel De Farias Ingra, Frazzon Enzo
Morosini & De Simas Davi**

For the paper titled

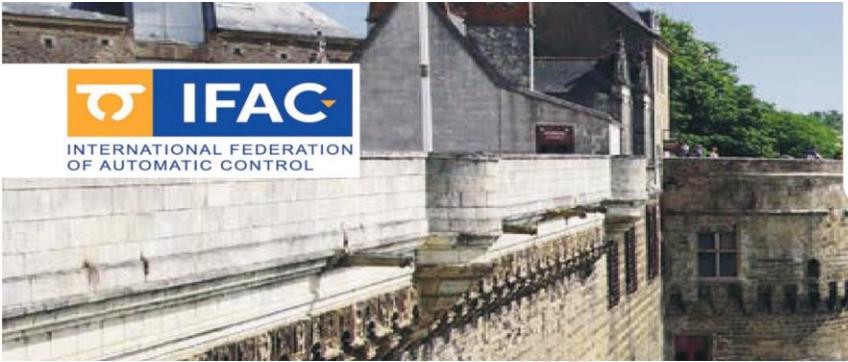
**Supply Chain Resilience in Turbulent Times: Conceptual
Model and Real-world Use Case**

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

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Dmitry Ivanov
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David Lemoine
NOC Chair



Commended Paper Award

Zhang Minqi, Grosse Eric & Glock Christoph

For the paper titled

**Potential of Mobile Applications in Human-centric
Production and Logistics Management**

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June 22 – 24, 2022, Nantes, France

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Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair



Commended Paper Award

Badulescu Yvonne, Tiwari Manoj K & Cheikhrouhou Naoufel

For the paper titled

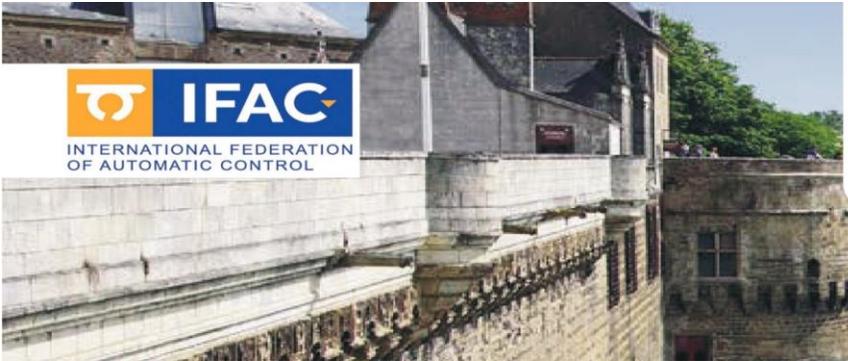
MCDM Approach To Select Iot Devices for The Reverse Logistics Process in The Clinical Trials Supply Chain

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

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Dmitry Ivanov
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David Lemoine
NOC Chair



Commended Paper Award

Nouinou Hajar, ARBAOUI TAHA & Yalaoui Alice

For the paper titled

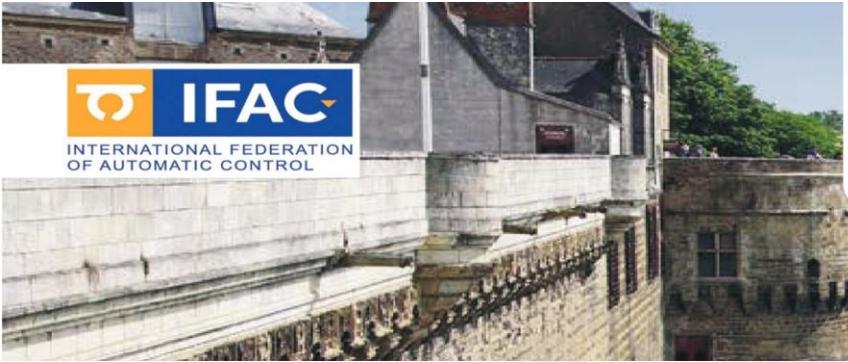
**Minimizing The Total Weighted Completion Times for
Semi-online Single Machine Scheduling**

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June 22 – 24, 2022, Nantes, France

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David Lemoine
NOC Chair



Commended Paper Award

Arias Marco, Sanchis Raquel & Poler Raul

For the paper titled

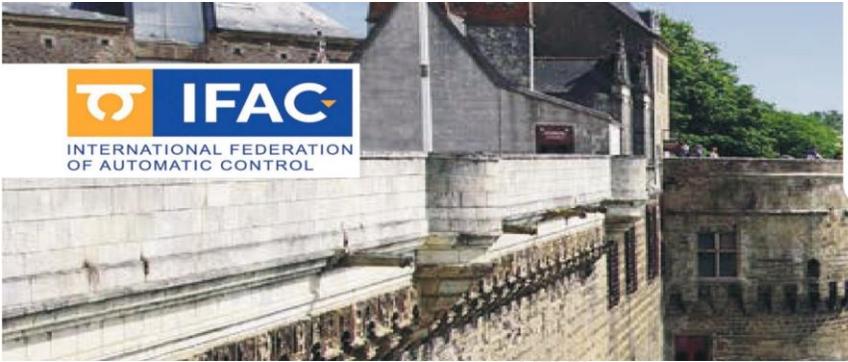
**Impact of Predicting Disruptive Events in Supply Planning
for Enterprise Resilience**

Presented at the IFAC MIMS2022 Conference
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Alexandre Dolgui
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Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair



Commended Paper Award

Badakhshan Ehsan, Ball Peter & Badakhshan Ali

For the paper titled

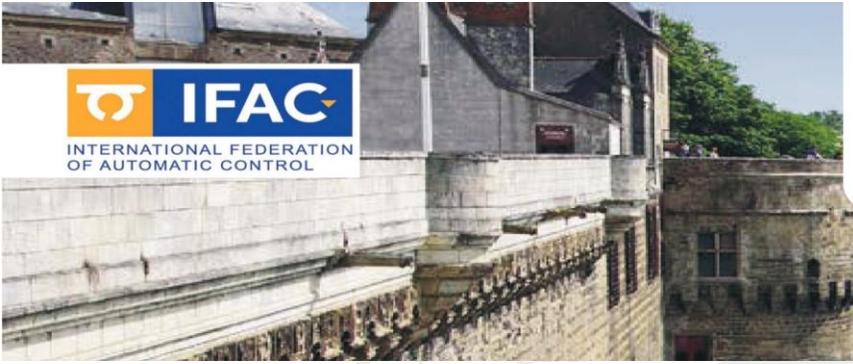
Using Digital Twins for Inventory and Cash Management in Supply Chains

Presented at the IFAC MIMS2022 Conference
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Conference Chair

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Program Chair

David Lemoine
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Commended Paper Award

Rahman Towfique, Paul Sanjoy Kumar, Shukla Nagesh,
Agarwal Renu & Taghikhah Firouzeh

For the paper titled

**Managing Panic-buying Related Instabilities in Supply
Chains: A COVID-19 Pandemic Perspective**

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

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David Lemoine
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Commended Paper Award

Ebrahimi Bajgani Sahar & Saberi Sara

For the paper titled

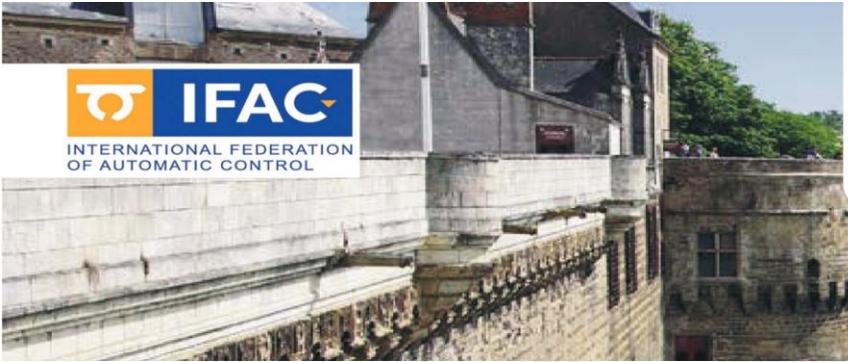
**Reverse Supply Chain Network With Return Products
Quality Consideration**

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Conference Chair

Dmitry Ivanov
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David Lemoine
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Commended Paper Award

Schmid Nico André, Montreuil Benoit & Limère Veronique

For the paper titled

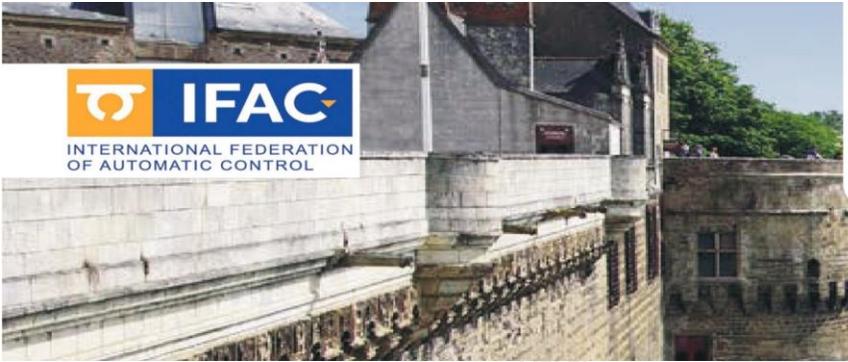
**A Case Study on the Integration of Assembly Line Balancing
and Feeding Decisions**

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

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Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair



Commended Paper Award

**Sprodowski Tobias, Hoff-Hoffmeyer-Zlotnik Marit &
Freitag Michael**

For the paper titled

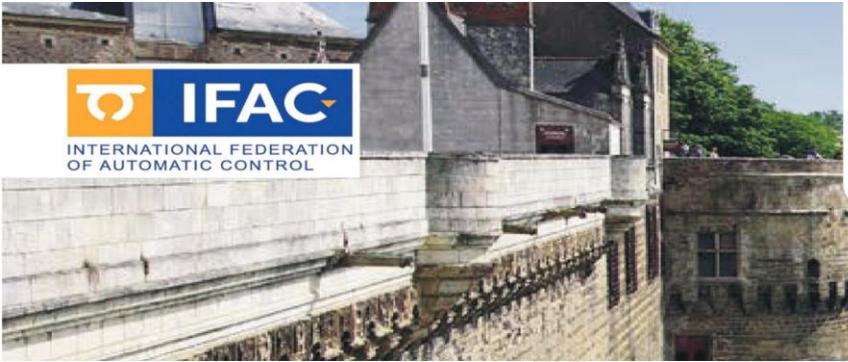
**Balance Efficient Shuttle Routing and Fast Order Execution
on A Vehicle Compound**

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

Alexandre Dolgui
Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair



Commended Paper Award

**Calzavara Martina, Faccio Maurizio, FINCO SERENA &
Zennaro Ilenia**

For the paper titled

**Influence of Task Time Variation in Adopting Walking
Worker Assembly Systems: an Innovative Design Approach**

Presented at the IFAC MIMS2022 Conference
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Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair



Commended Paper Award

Lolli Francesco, Coruzzolo Antonio, Peron Mirco & Sgarbossa Fabio

For the paper titled

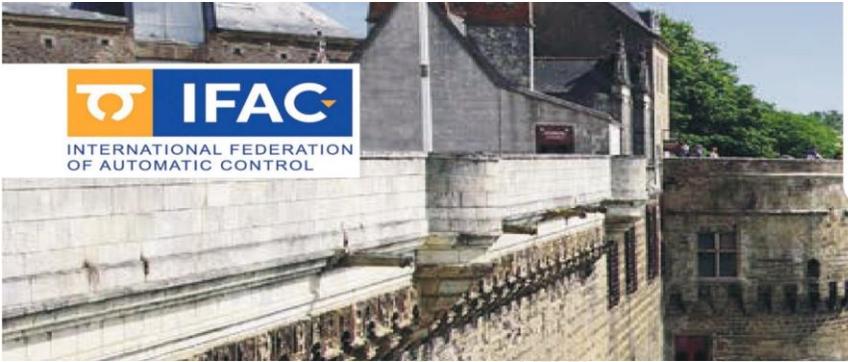
On the Suitability of Insourced Additive Manufacturing for Spare Parts Management

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

Alexandre Dolgui
Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair



Commended Paper Award

Lazarev Alexander, Lemtyuzhnikova Darya, Tyunyatkin
Andrey & Battaïa Olga

For the paper titled

**A New Interpolation-based Polynomial Algorithm for
Estimating Lateness in Single Machine Scheduling Problem**

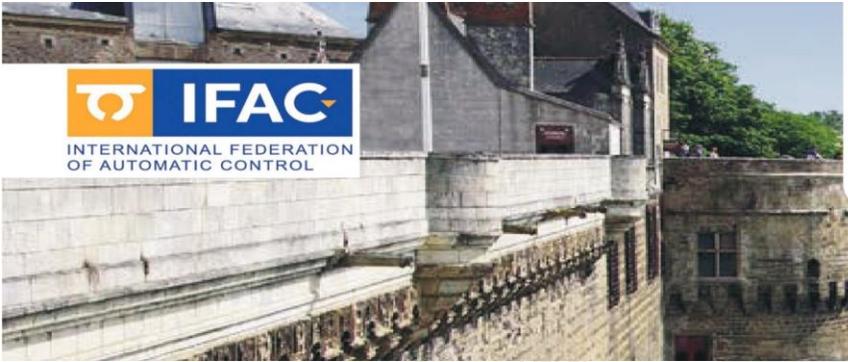
Presented at the IFAC MIMS2022 Conference
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Conference Chair

Dmitry Ivanov
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David Lemoine
NOC Chair

Young Author Award Finalist



Young Author Award Finalist

Terzi Mourad, Ouazene Yassine, Yalaoui Alice & Yalaoui Farouk

For the paper titled

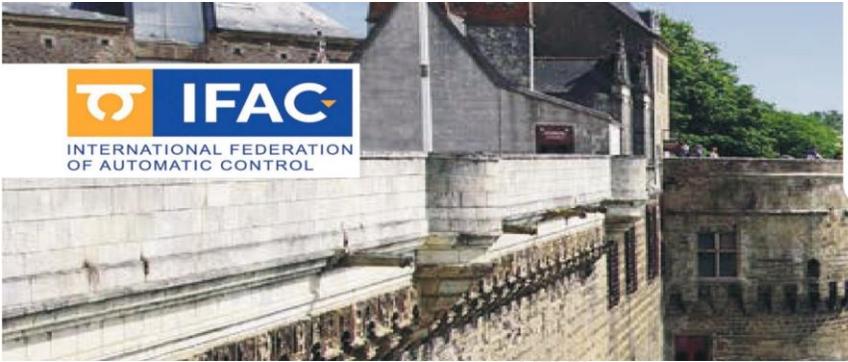
Integrated Lot Sizing and Pricing Problem Under Cross-price Demand Model

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

Alexandre Dolgui
Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair



Young Author Award Finalist

Keshvarparast Ali, Battaïa Olga, Pirayesh Amir & Battini, Daria

For the paper titled

Considering Physical Workload and Workforce Diversity in a Collaborative Assembly Line Balancing (C-ALB) Optimization Model

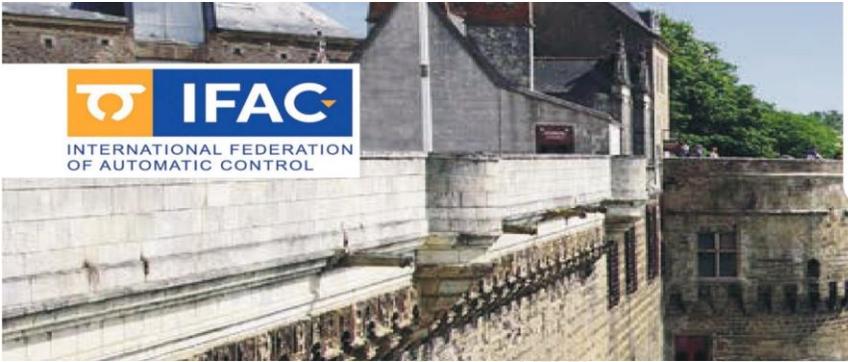
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June 22 – 24, 2022, Nantes, France

Alexandre Dolgui
Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair

Young Author Award



Young Author Award

**Berti Nicola, Finco Serena, Guidolin Mattia, Reggiani
Monica & Battini Daria**

For the paper titled

Multi-person Postural Assessment and Training in Real-time

Presented at the IFAC MIMS2022 Conference
June 22 – 24, 2022, Nantes, France

Alexandre Dolgui
Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair

Best Application Paper



Best Application Paper

Shahnejat-Bushehri Sina, Kermani Ali, Arslan Okan,
Cordeau Jean-François & Jans Raf

For the paper titled

**A Vehicle Routing Problem with Time Windows and
Workload Balancing for COVID-19 Testers: A Case Study**

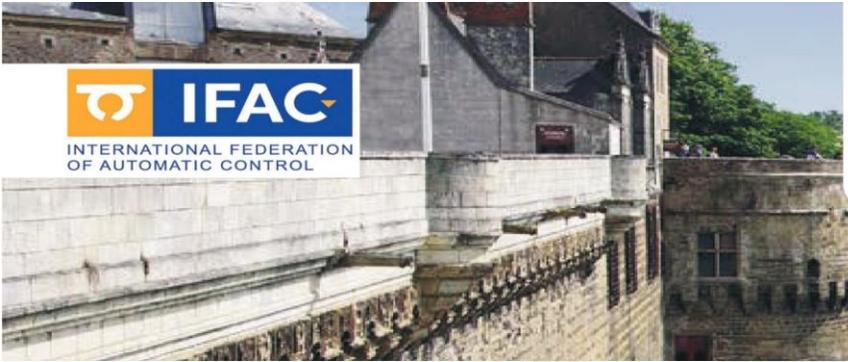
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Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair

Best Paper



Best Paper Award

Peron Mirco, Basten Rob, Knofius Nils, Lolli Francesco & Sgarbossa Fabio

For the paper titled

Additive or Conventional Manufacturing for Spare Parts: Effect of Failure Rate Uncertainty on the Sourcing Option Decision

Presented at the IFAC MIMS2022 Conference
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Conference Chair

Dmitry Ivanov
Program Chair

David Lemoine
NOC Chair



We hope you enjoyed MIM 2022

See you at the next MIM in Norway, **NTNU,
Trondheim**

**The 11th IFAC triennial conference
MIM 2025**