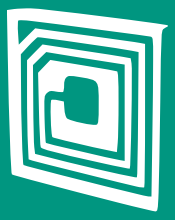
Laboratory
Decision and Information Systems
For Production systems

Performance improvement for goods and services production systems

www.disp-lab.fr



SCIENTIFIC GOAL

Improve the performance of goods and services production systems and comprehensive supply chains, by simultaneously addressing their structural, decision-making, information-related and human-related dimensions.

DOUBLE EXPERTISE

Industrial engineering • Information technology for business

KEY FIGURES

30 lecturers and researchers

27 PhD students

3 technico-administrative staff

15 invited researchers and interns every year

Three scientific axes

OPERATIONS MANAGEMENT FOR GOODS AND SERVICES PRODUCTION SYSTEMS

Production systems and supply chains configuration, planning and scheduling, for a sustainable and comprehensive performance even under uncertainty.

INFORMATION SYSTEMS AGILITY

Designing, assessing and managing the agility of information systems, at both business and technical levels, in a distributed and dynamic context.

SYSTEM LIECYCLE MODELING AND OPTIMIZATION

Managing data, interactions with stakeholders and tools, and optimizing the product/system environmental profile in a comprehensive lifecycle management approach.

Collaboration examples

MANUFACTURING

EDF, Thales, Fortal, Dassault, Rossignol, Saverglass, Renault, PIL/Deschamps, Valhrona, Chomarat, Arkema, Volvo (chair)

TRANSPORTATION AND RETAIL

STEF, Casino/EASYDIS, Auchan, Sotradel, Toupargel (chair)

HEALTHCARE

HCL, Hôpital St Joseph-St Luc, Croix Rouge, HAD 63, OVE, Soins et Santé, ARS Rhône-Alpes, CHU St Etienne, CHU Grenoble

IT

SAP, Software AG, Carl, Audros Technology, Courbon, KLS, α3i, Agilium, Jam, Cincom, Quasar, Processway, Users SAP France

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OPERATIONS MANAGEMENT FOR GOODS AND SERVICES PRODUCTION SYSTEMS

Production systems and supply chains configuration, planning and scheduling, for a sustainable and comprehensive performance even under uncertainty.

Our expertise

OPERATIONS MANAGEMENT AT BOTH TACTICAL AND OPERATIONAL LEVELS

- Planning and scheduling
- Managing human resources
- Taking into account uncertainties and environment-based risks
- Analyzing and modeling temporal information flows

PRODUCTION SYSTEMS AND SUPPLY CHAIN CONFIGURATION

- Configuration of flexible manufacturing cells
- Designing multi-echelon supply chains
- Integrating reverse logistics and return flows

PRODUCTION SYSTEMS PERFORMANCE OPTIMIZATION

- Proposing flexible, efficient and sustainable solutions
- ntegrating several decision levels (strategic/tactical, production/ supply…) for global performance

Our tools

Mathematical optimization
Mathematica Professional, MATLAB, IBM ILOG CPLEX

Flow simulation
Anylogic, SIMIO, FlexSim, Arena

Business applications
INCOPLAN, Ortems

Axis leaders

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A FEW FLAGSHIP PROJECTS

HRP3 project: Simulator for healthcare network configuration (sirene.disp-lab.fr) for strategic planning of emergency care.

With: Hospices Civils de Lyon, CHU42, CH privé de la Loire, CH St Joseph-St Luc, CH Roanne…

FUSION CO2 project: Prototype of a configuration tool for green and sustainable supply networks.

.*With*: CretLog, Université de Nantes

GUNDISHAPUR project: Production and supply organisation, management and coordination methods and models in supply chains.
With: University of Sharif (Iran)

Ordo project: Optimization of human resources skill mana-gement and collaborative practices in the supply chain.
With: Ligne Roset

BOOK WRITING OR DIRECTING (EXTRACT)

Reengineering The Hospital Supply Chain, Di Martinelly, Guinet, Riane, VDM Verlag (2010)

Supply Chain Performance: Collaboration, Alignment and Coordination, Direction Botta-Genoulaz, Campagne, Llerena, Pellegrin, ISTE Ltd (2010)

CONFERENCE LEADERSHIP

International Conference on Information Systems, Logistics and Supply Chain (ILS)

Gestion et ingénierie des systèmes hospitaliers (GISEH)

INFORMATION SYSTEMS AGILITY

Designing, assessing and managing the agility of information systems, at both business and technical levels, in a distributed and dynamic context.

Our expertise

SUPPORTING THE INTEGRATION OF NEW ORGANISATIONAL MODELS AND NEW TECHNOLOGIES IN INFORMATION SYSTEMS

- Characterize the evolution of organisational models
- Characterize the responsibility span of software infrastructures
- Performance analysis of information systems processes

SUPPORTING FUNCTIONAL AND ORGANISATIONAL INTEGRATION AND INTEROPERABILITY

- Offering alignment framework for changing information systems
- Considering their lifecycle, from design to integration and uses

KNOWLEDGE EXTRACTION, AGGREGATION, PRESERVATION AND SHARING

- Identifying, sharing and preserving knowledge in the long term
- Managing data scale, complexity and heterogeneity

Our tools

Process modeling
Suite Oracle BPM/SOA, Suite WSO2, Suite ARIS

Business applications
SAP ERP, SAP By Design
Odoo, Windchill

A FEW FLAGSHIP PROJECTS

MES project: www.mestria.eu, multi-application software platform to easily deploy MES processes according to the ISA-95 norm
With: Thésame, Univ. Savoie, Agilium, α3i, Carl Software, Cincom, Courbon, Quasar, Jam

Projet Fortal: aligning software-based information systems, risk identification centered model-driven engineering
With: Fortal, INSA Strasbourg

FITMAN European project: development and setting up of support architectures for collaborative processes
Avec: 38 partners from 11 countries, TXT e-solution SpA

Projet PLM Nucléaire: designing models of interactions between a business frame of reference and proprietary applications
With: EDF-Nucléaire, Arts et Métiers Paris Tech, ENSGSIS

Axis leaders

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BOOKS WRITING (EXTRACTS)

Process alignment maturity in changing organisations. Millet, Botta-Genoulaz (2008). In : ERP Systems and Organisational Change – A Socio-technical Insight, Direction B. Grabot, A. Mayère, I. Bazet, Springer (Londres)

CONFERENCES CREATION

International Conference on Software, Knowledge and Information Management and Applications (IEEE SKIMA)

International Conference on Information Systems, Logistics and Supply Chain (ILS)

SYSTEM LIFECYCLE MODELING AND OPTIMIZATION

Managing data, interactions with stakeholders and tools, and optimizing the product/system environmental profile in a comprehensive lifecycle management approach.

Our expertise

LIFECYCLE MANAGEMENT FOR SMART PRODUCTS AND SYSTEMS

- Lifecycle modeling and simulation in the Internet of Things, Cyber Physical Systems, factory of the future
- Modeling collaboration between the different lifecycle stakeholders
- Encouraging distributed decision making, accounting for human and social

DEVELOPMENT OF AN ECO-PLM ENVIRONMENTAL EVALUATION APPROACH FOR PRODUCTS/SYSTEMS

- Taking into account the environmental dimension in product data and process management
- Include pollution transfer in lifecycle assessment models
- Develop decision-support to improve the environmental profile

EVALUATION AND IMPROVEMENT OF SYSTEMS MATURITY

- Developing suitable formal models (multi-criteria approach)
- Integrating reputation analysis (semantic extraction)

Our tools

Product Lifecycle Management

ARAS
AUDROS
Windchill

Lifecycle assessment

Ecoinvent, OpenLCA, GABi

A FEW FLAGSHIP PROJECTS

Audros project: a system to manage and analyse normative data and knowledge, linked to the technical data stored in a PLM system.
With Audros Technology

TRAÇAVERRE project: analysing unit traceability to improve the production system performance.

EASY-IMP European project: Modeling highly communica-tive products; setting up a PLM-centered supporting plat-form for collaborative processes, and a collaborative engi-neering design approach.
With: 12 partners in 9 European countries

Axis leaders

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INTERNATIONAL JOURNAL CREATION

International Journal of Product Development (IJPD)

International Journal of Product Lifecycle Management (IJPLM)

CONFERENCE LEADERSHIP

International Product Lifecycle Management Conference (IFIP PLM)

International Conference on Software, Knowledge and Information Management and Applications (IEEE SKIMA)

PARTNERSHIP OPTIONS

Do you need an expert to support you in continuous improvement or breakthrough projects ?

Different partnership options are available depending on your specific needs.

THE LABORATOTY INSTITUTIONS ARE ACCREDITED FOR « CRÉDIT D'IMPÔT RECHERCHE ».

INTERNSHIP WITH RESEARCH

Duration : about 6 months

Conditions : full-time internship + accompanying contract

Research mission for a M2 or engineering student finishing his/her studies, supervised by a lecturer and researcher specialist in the topic .

EXPERTISE CONVENTION

Duration : of your choice

Modalité : consultancy contract

A lecturer and researcher, specialist in the topic of interest, support you in setting up a custom solution to your problem.

RESEARCH CONTRACT

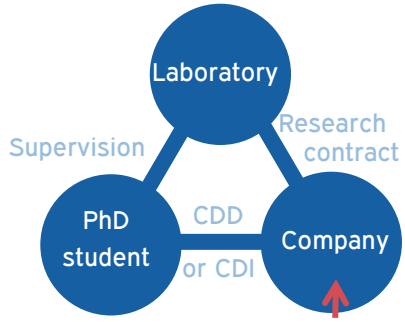
Duration : possibility for short-term, medium or long-term contracts

Conditions : Private law contract written in accordance with your specific needs: new concept, tools, demonstrator, prototypes, patents...

CIFRE PHD (CONVENTIONS INDUSTRIELLES DE FORMATION PAR LA RECHERCHE)

Duration : 3 years

Conditions :



ANRT subsidy: 14 000€/ayear over 3 years (figures from 2015)

A young researcher in doctoral training works in your company and in the laboratory to solve an applied research problem.

FRAMEWORK AGREEMENT

Premium partnership on a specific research axis, defined in the long term with a framework agreement

COLLABORATIVE RESEARCH PROJECT

Duration : 1 to 5 years

Conditions : multiparty project that can bring together several laboratories and companies.

Possible fundings : ADEME, FUI, ANR, Europe... Together, we look for the appropriate funding.

Exploring a research topic on a medium/long term, involving several companies and led by a research team that can gather several research centers in several countries.

INDUSTRIAL CHAIR

Long-term collaboration, in research and/or teaching, on a highly strategic, high priority issue.


Lifecycle
Standardization
Interopérability
Information
Architecture
development
Information
System
Simulation
Coordination
Performance
Operations
management
Flow
management
Organization
Scheduling
Développement
Business
Planning
Game theory
Production
Operations
research
Optimization
Knowledge
Goods Services
Mathematical
modelling
Product data
Modelling

SUPERVISING INSTITUTIONS

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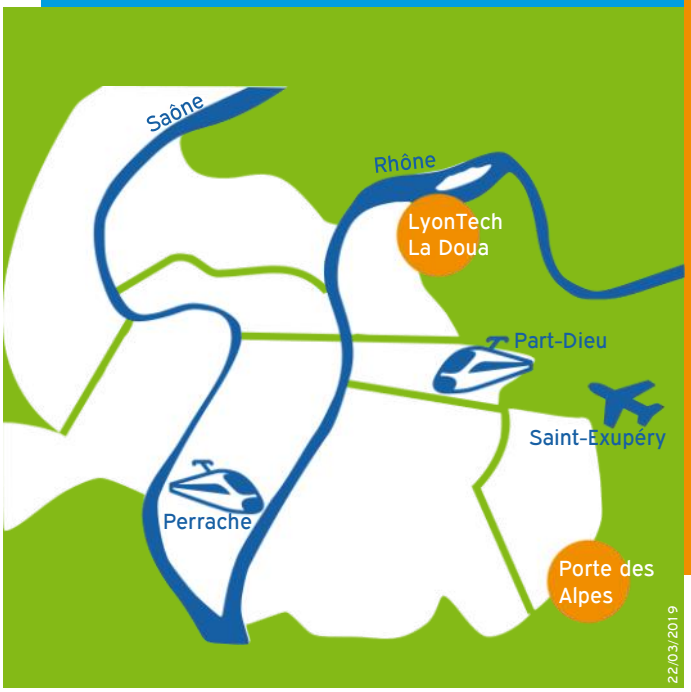
PARTNER INSTITUTIONS

EMLYON Business School

Université Jean Monnet St Etienne

UNIVERSITÉ DE LYON



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