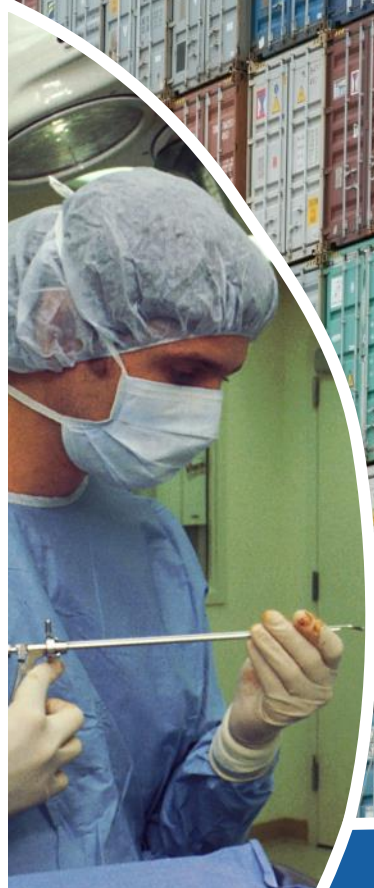




Laboratory  
Decision and Information Systems  
For Production systems



**Performance improvement  
for goods and services  
production systems**

[www.disp-lab.fr](http://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.

**28** permanent lecturers and researchers  
**2** administrative and technical staff  
**7** non permanent researchers (post-doc, ATER, research engineers)  
**22** PhD students  
**15** visiting scholars or interns every year

## Three research axes

### Operation 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.

### 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.

### Information systems agility

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

## Board of directors

### Director



**Valérie Botta-Genoulaz**  
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### Deputy directors

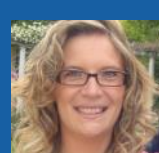


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### Secretariat



**Anastasie Notin**  
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## Double expertise

Industrial engineering

Information technology for business

## Collaboration exemples

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

### IT

SAP, Software AG, Audros Technology, Courbon, KLS, α3i, Agilium, Carl, Jam, Cincom, Quasar, Process way, USF (SAP French users)

# Operation 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
- Integrating several decision levels (strategic/tactical, production/supply...) for global performance

## Our tools

### Mathematical optimization

Mathematica Professional, IBM ILOG CPLEX, MATLAB

### Flow simulation

Anylogic, SIMIO, FlexSim, Arena

### Business applications

INCOPLAN, Ortems

## Books 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)

## Axis leaders



**Guillaume Bouleux**  
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**Thierry Moyaux**  
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## A few flagship projects

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

*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 management and collaborative practices in the supply chain.

*With:* Ligne Roset

## Conference leadership

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

Gestion et ingénierie des systèmes hospitaliers (GISEH)

# 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.

## Axis leaders



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Aicha Sekhari  
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## 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 factors

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*

**EASY-IMP European project:** Modeling highly communicative products; setting up a PLM-centered supporting platform for collaborative processes, and a collaborative engineering design approach.

*With: 12 partners in 9 European countries*

**TRACAVERRRE project:** Analysing unit traceability to improve the production system performance.

*With: 3 industrial partners and 4 research laboratories*

## Conference leadership

International Product Lifecycle Management Conference (IFIP PLM)

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

## International journal creations

International Journal of Product Development (IJPd)

International Journal of Product Lifecycle Management (IJPLM)

# Information systems agility

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

## Axis leaders



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Néjib Moalla  
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## 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 IS 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  
Odo, Windchill

## Books writing

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)

## A few flagship projects

**MES project:** multi-application software platform to easily deploy MES processes according to the ISA-95 norm ([www.mestria.eu](http://www.mestria.eu))

*With:* Thésame, Univ. Savoie, Agilium, α3i, Carl Software, Cincom, Courbon, Quasar, Jam

**PLM Nuclear project:** Designing models of interactions between a business frame of reference and proprietary applications

*With:* EDF-Nucléaire, Arts et Métiers Paris Tech, ENSGSIS

**FITMAN European project:** Development and setting up of support architectures for collaborative processes

*With:* 38 partners from 11 countries, TXT e-solution SpA

**Fortal project:** Aligning software-based information systems, risk identification centered model-driven engineering

*With:* Fortal, INSA Strasbourg

## Conference creations

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

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

# 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.

## 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

*Conditions* : consultancy contract

A lecturer and researcher, specialist in the topic of interest, supports 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...

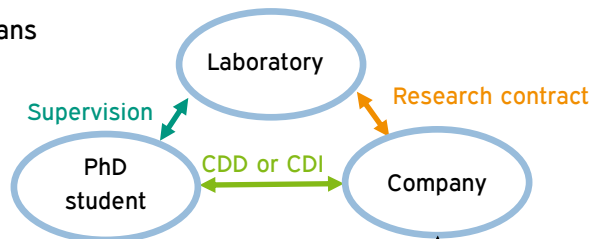
## CIFRE PhD Conventions Industrielles de Formation par la Recherche



The laboratory institutions are accredited for **crédit d'impôt recherche**.

*Duration* : 3 ans

*Conditions* :



ANRT subsidy: 14 000€/year 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.

## 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.

## Framework agreement



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

## Industrial chair



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

**Information System**

**Optimization**

**Business**

**Modeling**

**Development**

**Simulation**

**Architecture**

**Lifecycle**

**Architecture development**

**Standardization**

**Interoperability**

**Information**

**Operations management**

**Flow management**

**Scheduling**

**Coordination**

**Performance**

**Organization**

**Game theory**

**Production**

**Planning**

**Operations research**

**Knowledge**

**Goods**

**Services**

**Mathematical modeling**

**Product data**

## Supervising institutions



UNIVERSITÉ  
LUMIÈRE  
LYON 2

Université Claude Bernard  Lyon 1

## Partner institutions

EMLYON Business School

Université Jean Monnet St Etienne



## Laboratoire DISP — EA 4570

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