

## **Post-doctoral Position in** *'Supply Chain Planning and Inventory Optimization'*

**Location :** INSA Lyon, Villeurbanne cedex, FRANCE

**Contract:** 12 to 18 Months

**Keywords:** Supply Chain Planning, Inventory Optimization, Spare parts, Uncertainty and Unpredictability, Machine Learning, Artificial Intelligence, Multi-Model Co-Simulation, multiagent methods

**Objective and Context:** A post-doctoral position is proposed to develop models for optimizing supply chain planning and inventory optimization in highly uncertain and unpredictable demand of spare parts supply chains of business aircraft. The focus will be to extend the current research on inventory optimization, taking into account industrial partners' constraints, to develop and simulate multi-objective inventory optimization models by adapting/extending evolutionary algorithms (Particle swarm optimization, Ant and Bee colony, Simulated annealing, Genetic). The research focuses on optimizing TSL, ROQ, ROP, and safety stock as well as localization and transshipment in multi-echelon networked warehouses to support spare parts supply chain. These are required to be simulated with already developed demand forecasting models in a multi-model co-simulation environment including humans, modelled as decision making agents, to assess the impact of demand and inventory optimization strategies. Moreover, it is desired to integrate these new inventory optimization models into in-house developed demand forecasting and inventory optimization tool, developed as cloud SaaS (software as a service) application in R and RShiny. The postdoctoral researcher will work with Dr. Armand Baboli, in collaboration with our industrial partner, Dassault Falcon Jet, USA. High level scientific publications are also sought during the post-doc period.

**Skills and Experience:** The applicants should have PhD degree in industrial engineering or computer science. He/She should have knowledge of logistics and supply chain management and hands-on experience in modelling and simulation using Machine Learning (ML) and Artificial intelligence (AI) approaches. It will be an added advantage if he/she has modelling experience in Matlab, Simulink, R, RShiny, Java and multi model co-simulation environment e.g. FMI (functional mockup interface) and FMU (functional mockup unit).

**Start Time:** November 2017

**Note:** The applicants should send by e-mail a single PDF file to [armand.baboli@insa-lyon.fr](mailto:armand.baboli@insa-lyon.fr). The file should include: a cover letter describing background and motivation, a CV, and 3 most relevant publications. Please contact us at the mail above for any further information or questions.