DOCTORAL RESEARCH PROJECT (Ph.D.)

SUPPLY MANAGEMENT PROCESSES TO IMPROVE OPERATIONAL LEVEL PREDICTABILITY OF WOOD SUPPLY (Ph.D.II)

**FRENCH LANGUAGE**
Although most of our research team at the FORAC consortium are fluent in English and can facilitate your arrival at Université Laval, our students are expected to be able to communicate in French within the first year of their arrival in Quebec City.

**Research domain:**
Forestry, decision support systems; planning / optimization

**Prior education:**
Forestry, Wood Engineering, Operations Management, Industrial Engineering, Mathematics, Computer Science (or other relevant field of training).

**Research context:**
The FORAC research consortium is a strong partnership between stakeholders in the forest products industry (businesses and governments). Based at Université Laval (Quebec City, Canada), we offer our partners world-class multidisciplinary research expertise. We bring together expertise in the fields of forest engineering, wood engineering, industrial engineering, mechanical engineering, administrative sciences and computer science.

Our mission is to support the forest products industry in the design and effective management from the forest to the customer. FORAC aims to be a Canadian and international reference in the field of integration and optimization of the value creation network. Researchers are developing decision support and decision support methods that leverage the potential of data to improve planning, coordination and control of operations across all business lines (forest operations, transport and logistics, processing plants, etc.).

**Project description:**
Wood supply predictability defines the ability a system has to deliver the expected volumes of fiber, with the proper characteristics, and in a timely fashion. Supply chain visibility allows decision makers to have information regarding stock levels at various positions in the system. The lack of information in the wood supply system (WSS) poses a challenge for planners to integrate resources and processes and meet customer needs efficiently [1]. It can severely affect the financial performance of the WSS. In theory, improved visibility could be expected through information technologies, and stakeholders’ coordination. In the context of multi-stakeholder activities, a previous FORAC activity demonstrated that supply management processes (including the definition of the forest management strategies and sequence of interventions) is very complex, and information flows are not efficient [2]. Furthermore, many jurisdictions have engaged in tenure reform efforts over the past decade [3], modifying the structure of the supply management processes in forestry.

This activity aims to propose a mechanism to coordinate information exchange between stakeholders in a forest value chain. The focus will be on the means that would improve visibility. The Ph.D. student will build on case studies at three different forest companies: two operating in public forests, and one mostly active on private lands. In each case, the supply management processes will be mapped and formalized. The detailed modeling of these processes includes identifying the activities, their sequence, the stakeholders, and their interactions. A comparative analysis of the different case studies characteristics should lead to the assessment of the influence of different configurations on visibility in WSS and provide insights on best ways to improve the predictability.

**Expected Start date:**
2020-09-01

**Financing:**
Scholarship of $18,000 for the first year and $25,000/year in salary for 7 sessions. Funding is available for a total of 10 full-time sessions. Additional funds are available to cover the costs of participation in international conferences (with article) and travel expenses (collaboration with partners, industrial visits, field study).

**To apply:**
Interested candidates can apply by sending their application (including: CVs, transcripts and motivation letter) to the following email address: recruitment@forac.ulaval.ca or contact the professor to discuss the project directly: Luc LeBel, Pavillon Abitibi-Price Local 2121, Telephone: 418 656-2131 ext. 408835, Email: luc.lebel@sbfl.ulaval.ca

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