IMT Mines Albi-Carmaux
École Mines-Télécom

universität wien

Internship Proposal:
Designing of a domain-specific modeling tool for Business Continuity Management within health-related crisis

15 February 2019

- ▷ **Work Place:** Industrial Engineering Centre - IMT- Mines Albi-Carmaux (France)
- ▷ **Advisors:** Aurélie Montarnal, Elyes Lamine, Dominik Bork
- ▷ **Duration:** 3 to 5 months
- ▷ **Starting:** April 15, 2019
- ▷ **Training allowances:** 550€/month

Project context

Nowadays health care organizations recognize the benefits of new Information and Communication Technology (ICT) in the delivery of health care services. While these modern technologies have enhanced practices in the health care sector, the potential of failures interrupting business operation need to be prevented. This system downtime risk may induce significant impacts on patient safety and on the ability to deliver high-quality care services. Thus, ensuring business resilience has proven to be increasingly challenging as the health care field employs more ICT applications and all signs for the future point to an even greater reliance on digital data. In this context, Business Continuity Management (BCM) seems to be an appropriate approach to ensure the ability to operate in spite of unforeseen events and to quickly recover from any type of business interruption.

Internship objectives

The aim of this internship project is to create a domain-specific modeling tool for BCM. The ground work of the project was presented in [1, 2] where the importance for the use of model-based approaches for BCM and crisis management were elaborated. Within this project we want to design and develop a modeling tool which is able to create domain-specific models for BCM including algorithms and mechanisms, enabling validation and simulation of BCM models. The targeted application field is primarily the health care sector, more specifically the e-health domain.

The project will rely on the knowledge exchange between the University of Vienna - focusing on conceptualization and modeling tool engineering [3], the IMT Mines Albi-Carmaux - focusing on defining elements necessary to the development of business continuity management.

Desired skills and application

We are looking for a student currently enrolled in a **Master 2 or 1** or equivalent in computer sciences or in industrial engineering. The candidate should have strong skills in the following areas: Algorithmic, Object-Oriented Programming, Unified Modeling Language (UML). Knowledge in one of the following topics would be highly appreciated: Model driven architecture, Business continuity management, Risk management, e-health. In addition, good English reading and writing skills are required.

Applications should include the following : Letter of interest, Curriculum Vitae, Official transcripts of the Master (or equivalent).Recommendation letters are appreciated. Applications submitted to elyes.lamine@mines-albi.fr before **March** $15^{\mathbf{th}}$, 2019 will receive full consideration, although we will continue to accept applications after this date until the position is filled up.

References

[1] O. Rejeb, "Proposition d'un cadre méthodologique pour le management de la continuité d'activité: application à la prise en charge à domicile," Ph.D. dissertation, Ecole des Mines d'Albi-Carmaux, 2013. [Online]. Available: https://hal.archives-ouvertes.fr/tel-01019648/

[2] F. Bénaben, A. Montarnal, S. Truptil, M. Lauras, A. Fertier, N. Salatgé, and S. Rebiere, "A conceptual framework and a suite of tools to support crisis management," in *50th Hawaii International Conference on System Sciences, HICSS 2017, Hilton Waikoloa Village, Hawaii, USA, January 4-7, 2017*, 2017. [Online]. Available: http://aisel.aisnet.org/hicss-50/cl/crisis_and_disaster_management/2

[3] D. Karagiannis, H. C. Mayr, and J. Mylopoulos, *Domain-Specific Conceptual Modelling*. Springer, 2016.