Notice of the Final Oral Examination
for the Degree of Master of Applied Science
of
MAHER M. BOUIDANI
BSc (Philadelphia University, 2015)
“Design and Implementation of a Blockchain Shipping Application”
Department of Electrical and Computer Engineering

Friday, January 11, 2019
3:30 P.M.
Engineering and Computer Science Building
Room 468

Supervisory Committee:
Dr. Fayez Gebali, Department of Electrical and Computer Engineering, UVic (Co-Supervisor)
Dr. Hausi Müller, Department of Electrical and Computer Engineering, UVic (Co-Supervisor)

External Examiner:
Dr. Sudhakar Ganti, Department of Computer Science, UVic

Chair of Oral Examination:
Dr. Rueben Rose-Redwood, Department of Geography, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies
Abstract

The emerging Blockchain technology has the potential to shift the traditional centralized systems into more flexible and efficient decentralized ones. One of the areas to apply this capability is supply chain. Supply chain visibility and transparency become an important aspect of a successful supply chain platform as its practice becomes more complex than ever before. This is observed in the number of participants involved and their complex roles and relations among them. This puts more and more pressure on the system as well as on the customers in terms of system availability and tamper-resistant data. This thesis presents a Blockchain’s private and permissioned application that aims to automate the shipping processes among different participants in the supply chain ecosystem. Data in this private ledger is governed with the participants’ invocation of their smart contracts. These smart contracts are designed to satisfy the participants’ different roles in the supply chain. Moreover, this thesis discusses the performance measurements of this application results in terms of the transaction throughput, transaction average latency and resource utilization.