

# International Application for Admission Proposed Research

CURTIN  
University of Technology  
Department School of Computing

Masters by Research in Computer Science

Project Supervisor: Andrew Marriott (raytrace@cs.curtin.edu.au)  
Project Supervisor: Tim McGrath (tmcgrath@portcomm.com.au)

Project Student: Sacha Schlegel \*  
Student ID: 12253634  
E-Mail: sachas@schlegel.li

Document *Revision* : 1.19

October 21, 2002

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\*<http://www.schlegel.li>

## Contents

<b>1</b>	<b>Introduction of ebXML</b>	<b>3</b>
<b>2</b>	<b>How ebXML works</b>	<b>3</b>
<b>3</b>	<b>Masters by research thesis</b>	<b>3</b>
<b>4</b>	<b>Resources</b>	<b>4</b>
<b>5</b>	<b>Supervision</b>	<b>4</b>

## 1 Introduction of ebXML

Electronic Business XML (ebXML) is a new specification in the world of electronic business developed by OASIS (Organisation for the Advancement of Structured Information Standards) <sup>1</sup> and UN/CEFACT (United Nations Centre for Trade Facilitation and Electronic Business) <sup>2</sup>. It provides a framework for a global electronic marketplace and concentrates on collaborative business processes. ebXML is heavily based on XML for data structuring and interoperability.

The *technical* architecture of ebXML is divided into the ebXML Registry/Repository, ebXML Messaging Service, ebXML Collaboration Protocol Profile, ebXML Collaboration Protocol Agreement and ebXML Core Components.

## 2 How ebXML works

Companies describe the collaborative business processes and their particular role in a document called Collaboration Protocol Profile (CPP). Over time there will be collaborative business processes available in the ebXML registry. The company registers the CPP at a ebXML Registry/Repository. Other companies can search for other companies in the ebXML Registry/Repository. If a company finds another company to do electronic business a Collaboration Protocol Agreement (CPA) according to the CPP's of the two companies has to be created. Then both ebXML BSI (Business Service Interface) systems at each companies side will get configured with the CPA document. According to this configuration the ebXML BSI systems KNOW about the interaction and the structure of the messages between the two companies.

## 3 Masters by research thesis

The automated process of this derivation from two CPP's into one CPA is not defined in ebXML. The ebXML specification admits that this process might not be 100% automated and that human interaction might be necessary. The ebXML specifications supports a simple negotiation in order to get a CPA. This allows companies to set some negotiation freedom for the creation process of the CPA. The Negotiation Description Document describes which elements in the CPP are negotiable and in which way they are negotiable.

The purpose of this thesis is to research, design and implement an algorithm on how to derive a CPA from two CPP's or from a CPA template.

In general there are many business high level ideas how this specification works but there are not enough *concrete implementations* which demonstrate the advantage of ebXML available.

Research has to be done to understand how ebXML specific content has to be negotiated. There is a need for a *technical* solution on how to get the CPA. There are basically different ways how to get a CPA: Human interaction, static comparison algorithmic, intelligent software agents and negotiation. This

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<sup>1</sup><http://www.oasis-open.org>

<sup>2</sup><http://www.uncefact.org>

study will try to automate this creational process as much as possible and try to provide a logical concept or algorithm.

The results of this thesis shall be open sourced and licenced under a GNU GPL (GNU Public Licence) compatible licence. An integration of the results into the openebXML project is planned.

## 4 Resources

There are some very useful resources for this project:

- Personal contact with the openebXML laboratory <sup>3</sup> is available. The openebXML laboratory is created by the openebXML project, Toolsmith Company, the Department of Computer and Systems Sciences (DSV) of the Stockholm University and the Royal Institute of Technology in Kista, Sweden. This laboratory has currently about 30 researchers working in different areas of ebXML.
- The open source ebXML Registry/Repository “ebxmlrr” project hosted at Source Forge. The University of Hong Kong contributes developers to this project which initially got developed by Sun Microsystems and donated to the open source community in November 2001.
- The “open” process of the ebXML specification for further contacts, including the “open” mailinglists of OASIS committees.
- oz-ebxml mailinglist. An Interest Group for Australia representatives for the ebXML initiative.

## 5 Supervision

Two supervisors have agreed to supervise this thesis.

- Andrew Marriott, Senior Lecturer at Curtin University, School of Computing.
- Tim McGrath, current chair leader of the OASIS UBL (Universal Business Language) Library Content Subcommittee and former chair leader of the quality assurance committee. Tim is also co-author of the “Professional ebXML Foundations” book from Wrox Press Inc.

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<sup>3</sup><http://www.openebxmlab.org>