Cross-Context Transfer of Electronic Title Documents

by

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Abstract

CROSS-CONTEXT TRANSFER OF ELECTRONIC TITLE DOCUMENTS

by Wong Wai Lin

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Master of E-Commerce Technology

By the popularity of Internet, electronic bill of lading is a typical topic nowadays. It facilitates the logistic operation, minimizes the required time and enhances the overall accuracy. However, legal transfer of electronic title document across heterogeneous contexts is a challenging research problem in e-commerce and implies a wider e-commerce transaction scope. This kind of title transfer requires semantic consistency, confidentiality, integrity and legality between transferor and transferee. During the title transfer, cross-context semantic consistency must first be maintained between electronic title documents for legal title transfer while other requirements are considered. This article investigates the formation and transfer of electronic title document between the heterogeneous e-business systems in electronic marketplace. It mainly provides the solution of designing a generic and secure title document template, endorsing mechanism to transfer a title document securely between heterogeneous systems and ensuring a title document is independent of any heterogeneous contexts. It proposes a Cross-Context E-Title (CCET) approach, which satisfies the above requirements for title transfer. Based on CCET approach, a CCET prototype is further implemented, on which some experiments are made to test the correctness and performance of the proposed approach.

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LIST OF ABBREVIATIONS

BAck. Bolero Acknowledgement

BNAk. Bolero Negative Acknowledgement

CA. Certification Authority

CCET. Cross–Context E-Title

CCET-DE. CCET Document Engineering

CCET-DR. CCET Document Representation

CCET-DT. CCET Document Transfer

CCET-SC. CCET Standard Compatibility

CCMAP. Common-Common Context Map

ccREL. Creative Common Rights Expression Language

CEPC. Common Component EPC

DNot. Delivery Notification

DRM. Digital Right Management

DTDs. Document Type Definitions

EPC. Electronic Product Catalogues

ETDT. E-Title Document Transfer

ETDTA. E-Title Document Transfer Algorithm

FBRf. Forwarded Business Refusal

FMsg. Forwarded Message

FNot. Fatal Notification

FSML. Financial Service Markup Language

LCMAP. Local-Common Context Map

LEPC. Local Component EPC

LSMAP. Source-Local Context Map

MIME. Multi-Purpose Internet Mail Extensions

ODRL. Open Digital Right Language

PKI. Public Key Infrastructure

RA. Registration Authority

SBRf. Sent Business Refusal

SEPC. Source Component EPC

SMsg. Sent Message

SMTP. Simple Mail Transport Protocol

SOAP. Simple Object Access Protocol

UAck. User Acknowledgement

WSDL. Web Services Description Language

XML. Extensible Markup Language

XPM. XML Product Map

XrML. Extensible Rights Markup Language

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DEDICATION

The author wishes to dedicate this thesis to my parents and my future husband. With their support, I can finally finish this research. Especially thank to my lovely mum. In the past years of master research, she cared me a lot. She always tells me not to give up; the research will be completed in one day. And now, the day comes.

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