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ASEAN Single Window

The Intersection of Law & Technology

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1. Introduction

This paper has been prepared on behalf of the ASEAN Secretariat as a general introduction to the many and varied legal issues related to implementation of the ASEAN Single Window (ASW) and, to a large degree, the legal issues that ASEAN Member States implementing National Single Windows (NSWs) face. The importance of creating an enabling legal infrastructure for the ASW cannot be understated. It is possible today to create the technological infrastructure that will effectively and efficiently process customs documents and forms as well as business and shipping documents. While this technology development effort is challenging, it is equally challenging to create a legal environment for the ASW that provides for legal interoperability for cross-border exchanges of customs and other types of data through the ASW.

Choices made among various technological approaches, including specific system architectures decisions, in the development of a Single Window, can affect the legal options for creating the legal infrastructure needed for a particular Single Window facility. Similarly, legal requirements in a particular country's legislation and/or regulations can determine what technology options that can be used in developing the Single Window. For example, if a country's legislation mandates that digital signatures use a private key infrastructure (PKI) approach, then the use of alternative technical approaches to electronic signatures will be limited. In the case of the ASEAN Single Window development program, Member States are working simultaneously on both the technical and legal frameworks in addressing issues related to this "intersection" of law and technology.

Within this context this paper examines a variety of legal issues related to the development of the ASW and the efforts to create the ASW Pilot Project now underway. It also explores the general background of the development of the Single Window with special attention to the legal issues involved. And since the ASEAN Member States have recognized the importance of utilizing "international standards and best practices" in the development of the ASW, this paper also explores many of the legal issues that have been identified by the international community where the Single Window is being designed to facilitate international (cross-border) transactions as well as approaches for examining these issues. Not all legal issues have been fully resolved; there is still substantial work to be done at the international level to achieve wider harmonization of the legal approaches to the Single Window for international trade. The efforts by ASEAN Member States to create the ASEAN Single Window, including the creation of an enabling legal infrastructure are leading the field in this respect.

Further, this paper will look at a variety of legal issues based on the work of the ASW Technical Working Group and the ASEAN Secretariat as published in their recent Meeting Reports and supplemental Notes by the Secretariat. While the final decisions have not been made as to the exact technical nature and format of the ASW, the ASW Steering Committee recently supported

the development of an ASW Pilot Project using what has been described as the 'federated[1] approach' to the ASW.[2]

The Appendix summarizes the current state of the technical development of the ASW (and the Pilot Project). It should be reviewed with this paper for the purpose of considering the potential 'intersection' issues between the law and ASW technology.

In this paper the examination of the issues related to the legal infrastructure for the international Single Window seeks to provide guidance that will support the development of a robust system of cross-border trade between ASEAN Member States and for cross-border trade beyond the region. For this reason, as well as those mentioned earlier, the paper examines issues in a way that uses international standards to ensure broad interoperability across borders and will take into account technical infrastructure issues whenever possible.

[1] The alternative to this approach would be the so-called 'bi-lateral' approach in which each of the 10 Member States of ASEAN would have single agreements with each of the other Member States regarding the interchange between its NSW and that of each other State.

[2] *See*, Report of the 2nd Meeting of the ASW Steering Committee, April, 2008.

2. Background Developments for the Single Window

Technical development of the Single Window[3] has been underway for a number of years. While using Information and Communications Technology (ICT) is certainly not the only methodology for developing a Single Window[4] an ICT approach has been given emphasis at least in part by the Revised Kyoto Convention[5] and other international efforts. Additionally, the growing use of electronic commerce methods in international business transactions has demonstrated the increasing importance of ICT as a basis for Single Window operations. Organizations such as the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)[6] and the World Customs Organization (WCO)[7], among others, have active programs that focus on the general benefits and the technical aspects of "paperless trade."[8]

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[3] One definition of the "Single Window" is provided by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) in its "Recommendation 33 – Establishing a Single Window":

"*[A] Single Window is defined as a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, expert, and transit-related regulatory requirements. If information is electronic, then individual data elements should only be submitted once*."

Recommendation and Guidelines on Establishing a Single Window to Enhance the Efficient Exchange of Information between Trade and Government, Recommendation No. 33, (ECE/ TRADE/352, July 2005) hereinafter "CEFACT Recommendation 33", available at http://www.unece.org/cefact/recommendations/rec_ index.htm.

[4] Using a "paper Single Window system" may be an appropriate alternative for some countries. "A Single Window does not *necessarily* imply the implementation and use of high-tech information and communication technology (ICT), although facilitation can often be greatly enhanced if Governments identify and adopt *relevant* ICT technologies for a Single Window." CEFACT Recommendation 35, *supra* note 3, at 3.

[5] International Convention on the Simplification and Harmonization of Customs Procedures, *as amended* (1999), available at http://www.wcoomd.org/kybodycontent htm. The revised Kyoto Convention, developed by the World Customs Organization, entered into force on February 3, 2006 and as of September 2007, 54 States had become contracting parties by ratifying the Convention.

[6] UN/CEFACT is a unit within the United Nations Economic Commission for Europe. Its website can be accessed at unece.org/cefact/.

[7] See, e.g., The WCO Data Model, available at http://www.wcoomd.org/home_wco_topics_pfoverviewboxes_ tools_and_instruments_pftoolsdatamodel htm; The WCO Data Model Handbook - Version 2.0 (2006).

[8] See, e.g., "Workshop on International Standards to Stimulate Paperless Trade," Kuala Lumpur, Malaysia (20-21February 2006). Full program information is available at

A great deal of concern and energy regarding the development and implementation of Single Window facilities has focused on the importance of technical "interoperability" across borders.[9] The reasons for this are obvious, at least in terms of using a country's Single Window facility for efficient cross-border trade transactions with Single Window facilities in other countries. Work in this area has grown in various organizations. For example, UN/CEFACT is developing Recommendation 34 (Recommendation and Guidelines on Single Window Data Harmonization) based on the need to establish data harmonization methodology at the national, regional, and international levels.[10]

However, it is only recently that the necessity for creating an enabling legal infrastructure has emerged as an important element for the success of a Single Window facility at the national level and, to the extent possible, for a harmonized legal infrastructure at the regional and international levels. Further, harmonization of the legal framework for purposes of operating a Single Window across borders, particularly if the system is ICT-based, often requires review of other aspects of the legal environment for the "supply chains" and other relevant stakeholders served by the Single Window.[11]

And as is inevitably the case for assessing and developing the legal framework for the Single Window, the technology choices that are made for the Single Window facility can directly affect the choices and/or alternatives for structuring the appropriate legal framework for the Single Window. As noted above, this is the area in which is important to consider issues related to the *intersection of law and technology*.

The concept of the Single Window in trade is relatively straightforward. In her remarks introducing UN/CEFACT's Recommendation 33, *Establishing a Single Window to Enhance the*

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http://www.unece.org/trade/workshop/malaysia_feb06/ welcome htm; *see generally* "A Roadmap Towards Paperless Trade," United Nations Economic Commission for Europe, ECE/TRADE/371 (2006), available at http://www.unece.org/cefact/publica/ece_trd_371e.pdf.

[9] See UN/CEFACT, "Symposium on Single Window Standards and Interoperability" (3-5 May 2006), available at http://www.unece.org/trade/workshop/sw_2006/agenda.pdf. CEFACT highlights the importance of this issue in its program website by noting:

> On day one, the Symposium introduced the Single Window (SW) concept to countries, which were considering establishing such facilities. During the following two days, participants discussed the *key implementation and interoperability issues, noting the importance of facilitating the exchange of information between the SW systems through the use of international standards*. The meeting proposed the creation of a Stakeholders Group to assist Single Window operators in the simplification and harmonization of cross-border data exchange and in the development of a Cross Border Reference Data Model to allow *data interoperability for end-to-end trade transactions.*
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> [*Emphasis added*.]

[10] "Symposium Conclusions," UN/CEFACT Symposium on Single Window Standards and Interoperability, (Geneva, May 3-5, 2006), available at http://www.unece.org/trade/workshop/sw_2006/sw_conclusions.pdf.

[11] *See*, Dr. Bart Schermer, "Legal Issues of Single Window Facilities for International Trade," UNCITRAL CONGRESS – MODERN LAW FOR GLOBAL COMMERCE (July 2007) (hereinafter, "CEFACT Legal Group Paper") at 4. The paper is available under the program topic "Electronic Commerce: Going Beyond Functional Equivalence" and may be accessed at http://www.uncitral.org/uncitral/en/about/congresspapers.html.

Efficient exchange of Information between Trade and Government, Brigita Schmšgnerov, Executive Secretary of the United Nations Economic Commission for Europe, noted that the Single Window provides that, "… trade-related information and/or documents need only be submitted *once* at a single entry point to fulfill all import, export, and transit-related regulatory requirements."[12] Recommendation 33 expands on Ms. Schmšgnerov's comment and defines the Single Window as:

> Within the context of this Recommendation 33, a Single Window is defined as a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfill all import, expert, and transit-related regulatory requirements. If information is electronic, then individual data elements should only be submitted once.[13]

The benefits for establishing a National Single Window have been identified by various organizations. In Recommendation 33, UN/CEFACT describes the general benefits that can accrue to governments and the private sector this way:

> The implementation of a Single Window can be highly beneficial for both Governments and trade. For Governments it can bring better risk management, improved levels of security and increased revenue yields with enhanced trader compliance. Trading communities benefit from transparent and predictable interpretation and application of rules, and better deployment of human and financial resources, resulting in appreciable gains in productivity and competitiveness.

The value of such a facility for governments and traders has taken on increased importance in the new security environment with its emphasis on advance information and risk analysis. [14]

The ASEAN Single Window (ASW), once operational, will be one of the key elements in the ASEAN Member States efforts to create an integrated economic community by 2015 and to enhance both regional and global trade and development.[15] The ASEAN States have outlined an ambitious and leading-edge approach to achieve these goals through the use of the ASEAN Single Window and doing this using modern Information and Communications Technologies (*e.g.*, electronic commerce modalities).

The ASEAN Secretariat (Secretariat) has developed a broad ASW model for simplifying and streamlining customs processing (an e-government component of the ASW) while taking into

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[12] *Foreward, Recommendation and Guidelines on Establishing a Single Window to Enhance the Efficient Exchange of Information between Trade and Government* – Recommendation No. 33, at page iv (ECE/ TRADE/352, July 2005) hereinafter "CEFACT Recommendation 33", available at http://www.unece.org/cefact/recommendations /rec_index.htm.

[13] *Id.* at 3.

[14] *Id.*

[15] *See e.g.*, DECLARATION OF ASEAN CONCORD II (BALI CONCORD II), Article B – ASEAN Economic Community (7 October 2003), available at http://www.aseansec.org/15159.htm; *see also* RECOMMENDATIONS OF THE HIGH-LEVEL TASK FORCE ON ASEAN ECONOMIC INTEGRATION, annexed to Bali Concorde II, available at http://www.aseansec.org/hltf htm.

account the needs of other stakeholder groups (e.g., manufacturers, customers, shippers, financial facilities, and port operators)[16]

To address legal issues related to the Single Window, the UN/CEFACT Legal Group began work in 2006, in cooperation with CEFACT's TBG 15,[17] on the development of a new recommendation that would provide general guidance on the legal issues related to the Single Window for international trade. This new Recommendation 35[18] is an important effort to identify various legal issues that may be barriers to the implementation of a Single Window operation and to suggest that governments should try to analyze and address these issues at the start of the development of their National Single Windows.

While the final version of this UN/CEFACT Recommendation has not been released, Dr. Bart Schermer, the Chair (*ad interim*) of the CEFACT Legal Group, delivered a paper on the Single Window at the recent UNCITRAL Congress, Modern Law for Global Commerce.[19] This paper, "Legal Issues of Single Window Facilities for International Trade,"[20] describes some, though not all, of the possible legal issues related to the development and implementation of a Single Window.

Other organizations have also focused on the Single Window in the past several years. For example, the World Trade Organization (WTO) has received numerous submissions regarding the Single Window for international trade in its current Negotiation on Trade Facilitation.[21] ASEAN itself[22] and several Member States have filed positions with the WTO in this regard.

The work programs of other international bodies, while not directly related to the Single Window development, do intersect with the broader legal issues that are important to the operation of an

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[16] "Essential Features of the ASEAN Single Window," HIGH LEVEL WORKSHOP ON THE IMPLEMENTATION OF THE SINGLE WINDOW, Hanoi, Vietnam, 2-4 October 2006; *see also* Alexander M. Arevalo, "Development of the ASEAN Single Window," presentation at the *Symposium on the Single Window Standards and Interoperability*, United Nations Economic Commission for Europe Geneva, Switzerland (3-5 May 2006.) (This PowerPoint presentation is available at www.unece.org/trade/workshop/sw_2006/presentations/s3_ASEAN.ppt.)

[17] International Trade and Business Processes Group's International Trade Procedures Working Group (TBG-15) developed CEFACT's Recommendation 33 on Establishing a Single Window as noted above. *See supra* note 3.

[18] Recommendation 35 – Recommendation on Legal Framework for International Trade Single Window To Enable the Development of Single Window Systems and Exchange of Information in the Single Window Environment is currently under development by the CEFACT Legal Group. It is expected that it will be available for public review in the Fall of 2008.

[19] http://www.uncitral.org/uncitral/en/about/congress html.

[20] *See supra*, note 11.

[21] *See generally* WTO Negotiation on Trade Facilitation, available at http://www.wto.org/English/tratop_e/tradfa_e/ tradfa_e.htm#meeting. The work in this WTO negotiation is related primarily to country treaty obligations under Articles V, VIII and X of the General Agreement on Trade and Tariffs (GATT.)

[22] See "Communication from ASEAN to the Negotiating Group on Trade Facilitation," TN/TF/W/105 (06-2527), 26 May 2006.

international Single Window. In the area of ICT, for example, the United Nations Commission on International Trade Law (UNCITRAL)[23] has completed a major international convention[24] and several Model Laws[25] that provide important guidance and set an international standard in the field of electronic commerce law. To the extent that having an "e-Commerce-ready legal environment" is important to trade and business development (i.e., an enabling legal infrastructure) as well as important to the use of ICT for national and international Single Window facilities, the UNCITRAL texts provide important international policy guidance.

Finally, a recent development should be noted. The WCO has initiated a joint Legal Working Group at the WCO. Building in part on the work done at UN/CEFACT on the legal issues related to the Single Window, the WCO and UNCITRAL will soon begin work on the development of a detailed international reference or guidance document on the legal issues related to the international Single Window. This work is likely to focus not only on the legal issues related to cross-border exchange of data between governments (G2G), but also on legal issues of importance to other stakeholders in the Single Window environment, including industry sectors (B2G, G2B, B2B.)

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[23] UNCITRAL's general mandate is "to further the progressive harmonization and unification of the law of international trade." It is the "core legal body within the United Nations system for international trade law." Additional information regarding UNCITRAL and its work is available at http://www.uncitral.org/uncitral/en/ index html.

[24] The *United Nations Convention on the Use of Electronic Communications in International Contracts* was adopted by the UN General Assembly on November 23, 2005. See Resolution Adopted by the General Assembly [on the report of the Sixth Committee (A/60/515)] 60/21. United Nations Convention on the Use of Electronic Communications in International Contracts, Official Records of the General Assembly, 60th Session, A/RES/60/21 (hereinafter, "Electronic Communications Convention.")

This new convention not only provides international legal standards for electronic transactions, but also enables integration of the new e-Commerce provisions in a wide range of earlier treaties. The Convention and an explanatory note by the UNCITRAL Secretariat are available online at http://www.uncitral.org/pdf/english/ texts/electcom/06-57452_Ebook.pdf.

[25] The UNCITRAL Model Law on Electronic Commerce with a Guide to Enactment (1996, with additional Article 5 *bis* done in 1999) and the UNCITRAL Model Law on Electronic Signatures (2001) may be accessed at http://www. uncitral.org/uncitral/en/uncitral_texts/electronic_commerce.html.

Provisions of this Model Law have been enacted in 24 countries and in 9 territories and dependencies. Further, the United States *Uniform Electronic Transactions Act*, which is strongly influenced by the Model Law, has been adopted in 47 states. Similarly, several Provinces in Canada have enacted Canada's *Uniform Electronic Commerce Act*, which is based on the Model Law.

The Model Law on Electronic Signatures has been the basis of legislation in 5 countries.

3. Legal Issues in the Single Window Environment

INITIAL CONSIDERATIONS

In order to fully understand the legal issues that are relevant and important to the ASEAN Member States in the development of the ASW, and even the Pilot Project, it is useful to explore the essential legal issues related to the creation and operation of any Single Window. This also presents an opportunity to consider how the technical architecture of the ASW can affect the range of legal issues that must be addressed. This exercise may also be useful to individual governments that have or are in the process of establishing their NSWs, particularly since the potential for enabling cross-border transactions among ASEAN countries, as well as countries in other regions, will be a key concern.

Many of the following legal issues[26] are generic to the legal infrastructure for both National Single Window (NSW) development and for cross-border (or international) Single Window development since there can be substantial overlap between them. It is clear, of course, that there are specific areas in the following discussion in which national law operates. For example, the actual creation of the legal infrastructure for the NSW will be firmly based in domestic law and regulation.

At the same time, as noted above, it is important to craft national legislation and regulations in a way that will enable the National Single Window to be interoperable with other National Single Windows, that is, national legislation or regulations should authorize cross-border electronic transactions as well as domestic transactions within its Single Window. As with the technical development of an NSW—one designed to be interoperable across borders—the national legal infrastructure should be constructed with a view to using international standards.

Enabling Legislation or Regulation

Establishing an NSW generally requires some type of enabling legislation or regulation (depending a country's particular legal regime) that establishes the legality and validity of a Single Window operation in a country. Since a country's Single Window facility, in most cases, will involve more government agencies than its Customs Administration, national legislation (or

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[26] As noted above, these baseline legal issues were identified in the CEFACT Legal Group's paper delivered at the UNCITRAL Congress by Dr. Bart Schermer in July 2007. This Section draws from this CEFACT Legal Group paper and expands its coverage and analysis. *See supra* note 11.

regulations or both) is usually an important first step. This is essential to eliminating legal uncertainty about the legal status of the Single Window in national law and will be important to international trade development and legal interoperability with other international Single Windows.

Additionally, such national legislation will need to take into account related laws that may be administered by governmental agencies other than the Customs Administration but that interact with the national Customs Administration. This is needed to ensure that these other government agencies (OGAs) have a mandate either to share information with the Customs Administration or to be able to obtain information from the Customs Administration. This ensures consistency (and cooperation) between those OGAs that may be outside a country's Customs Administration. This may be particularly important where the national Single Window must assure another country's Single Window facility that all sharing of information between government agencies will be compliant with national law.

Further, most countries have other laws or policies (e.g., those related to taxation, privacy, national security) that may be implicated by its Single Window operations and these should be evaluated as well. A thorough evaluation in this area may show the need for amending existing legislation or regulations or adopting new legal mechanisms to address these areas.

Where the use of Information and Communications Technologies (ICT) by the NSW is anticipated, countries may wish (and probably should) develop an "electronic commerce" legal regime and, where needed, existing electronic transaction laws should be reviewed. It is important that national law permit all relevant transactions involving the Single Window (e.g., B2G, G2G, and G2B transactions) to be done electronically, both domestically and across borders.[27]

Information sharing, Data Protection, and Privacy

One of the key areas of legal concern in the Single Window for national and international operations is related to information sharing. At one level information sharing should be authorized in national legislation.[28] But the details of an information-sharing process should be established for agencies[29] that are authorized to provide or receive Single Window data. These mechanisms can include regulations, memoranda of understanding (MoU) and interconnection security agreements between agencies.[30] There are many examples of MoUs and each Single Window facility should develop one that meets the requirements of national law and regulation.

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[27] Again, it should be noted that the concept of the Single Window does not require that ICT methods be used although this is often the preferred approach and is the approach being adopted by the ASW. *See supra*, note 4.

[28] *See supra* note 11

[29] When considering a private or public-private organization to operate a national (or regional) Single Window, these same considerations apply.

[30] *See, e.g.*, "Security Guide for Interconnecting Information Technology Systems," National Institute of Standards and Technology, NIST Special Publication 800-47 (August 2002), available at http://csrc nist.gov/publications /nistpubs/800-47/sp800-47.pdf. Appendix B of this document includes a

Additionally, data protection issues arise in the context of the Single Window. Most frequently, these issues focus on access to data, integrity of the data being processed by the Single Window, and the accuracy of the data. As noted previously, a legal framework is necessary to permit access to data (e.g., by other governmental agencies) where such access has been authorized by law or regulation. Similarly, though it is often considered a technical issue, policies (regulations) should be adopted that ensure the integrity of the data through a series of data quality checks, audit trails, logging mechanisms, etc., that ensure only authorized access as well as maintaining the integrity of the data. Failure to do so could result in potential liability accruing to the Single Window facility operator.[31]

Ensuring the accuracy of the data entered into the Single Window (and distributed from it) is important for a variety of reasons, though the data received by the Single Window from an outside user cannot always be controlled. The accuracy of information received by any customs organization has always been important. It may be appropriate to examine those laws and regulations relating to errors and omissions of information submitted to the Single Window operation to be certain that such laws are consistent with current standards.[32] Additionally, a carefully drafted "end-user agreement" should be developed for all non-governmental entities that may provide information to (e.g., declarations) or receive information from (e.g., export permits, etc.) the Single Window.

Another reason that the arrangements noted above should be examined and made part of national law requirements and regulations relates to the cross-border aspects of a Single Window facility. Where it is anticipated that a Single Window facility will be interoperable with other countries' Single Windows, some level of certainly need to be provided to those country Single Window operations and to other stakeholders involved in the international supply chain that information and data will be controlled effectively to prevent unauthorized access to or dissemination of trading partner data. For example, these stakeholders may include suppliers, customers, shippers, financial facilities, etc., whose data may be exchanged with and circulated among agencies connected to the Single Window.

Further, information-sharing activities between governmental units may have implications for privacy laws and a careful examination of the legal framework related to privacy in a particular country should be undertaken. But not only are issues related to privacy law important in many national jurisdictions, they also may be particularly important in other countries or regions with

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sample of an System Interconnection Implementation Plan. This document is widely used for purposes of developing systems security protocols for Customs operations in the United States and elsewhere.

[31] *See generally* Thomas Smedinghoff, "Where We're Headed: New Development and Trends in the Law of Information Security," PRIVACY & DATA SECURITY LAW JOURNAL (January 2007), available online at http://www.wildman.com/resources/articles-pdf/Where_We're_Headed_-_New_Developments_and_Trends_in_the_Law_of_Information_Security_-_PUBLISHED_VERSION.pdf, at 103-106. While this article is focused on company information security legal issues, it provides guidance on the general direction in which the law is moving. Additionally, where the development of SW facilities involves all stakeholders, these issues will be important to those in the commercial sectors.

[32] Consideration should be given to possible issues related to security, fraud, and other willful behaviors that can affect the effectiveness of the Single Window.

which the Single Window may interact.[33] It is critical that data processed through the Single Window comply with relevant privacy and data protection laws. Privacy and data protection law differs in many countries and regions and, therefore, this area of law should be examined in establishing the legal framework for the Single Window's operations.

Specifically in the ASW environment, ensuring the confidentiality, integrity, availability, and privacy of information and data are fundamental to protecting the information assets of government and private sector participants. The Single Window trade data system should provide information security protection commensurate with the risk and magnitude of the harm resulting from the unauthorized access, use, disclosure, theft or loss of sensitive information collected or used in the system. Appropriate information security includes the security controls.

Privacy and security should be built into the Single Window trade data system. Privacy must be considered when system design requirements are being developed and decisions are being made about the data and information that will be collected, and how it will be used in the system and shared between and among members of the trade community, participating governments and other organizations involved in the Single Window.

In light of these considerations, the legal infrastructure for the Single Window in each country could include laws and implementing regulations and policies that provide adequate privacy and security protections for all sensitive and PII, financial, confidential, trade secret, proprietary, and law enforcement data and information in the system.

This legal framework should also ensure compliance with the privacy laws and policies of countries and organizations around the world (such as the European Privacy Directive and individual country privacy laws) that apply to data in the Single Window. This may be less of a daunting task than might appear at first but the agency or ASEAN involved in implementing the Single Window should take this into account.

Finally, issues related to *authentication* and *identification* in the electronic environment should be addressed. In the context of Single Window operating procedures, the question is whether there are systems in place that can reliably ensure that those individuals accessing the Single Window have the authority to do so. Many organizations have opted for a system that uses a user name (or ID) and a password, referred to as "single factor" authentication. It is difficult to determine in the abstract whether *single factor* authentication or identification is reliable enough for those accessing the Single Window within the Single Window facility itself (whether it is government operated or operated by a nongovernmental agency) or from other governmental agencies. The most appropriate approach for making this determination is to develop a risk assessment to

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[33] For example, where data associated with shipments to or from European Union countries are processed through a Single Window, it may be appropriate to consider how the EU Privacy Directive may effect transactions through the Single Window. *See Directive 95/46/ED of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data*, Official Journal of the European Communities of 23 November 1995 No L 281,31, *available at* http://www.cdt.org/privacy/eudirective/EU_Directive_ html (Unofficial text).

examine whether a more robust authentication or dentification approach (a *multifactor authentication* system) is needed.[34]

Naturally, this issue is one that arises in the context of end-users of the Single Window, that is, the organizations (e.g., manufacturers, traders, agents, shippers, buyers) that may access the Single Window by way of submitting data (e.g., Declarations) or receiving information from the Single Window.[35]

Organizational Issues for the Single Window

Countries will usually select the organizational approach for the Single Window that is appropriate to existing requirements and needs. It is not necessary that the organizational arrangement be identical in every country, just as the technical structures may not be identical. Generally, there are three approaches: (1) a governmental entity (such as the Customs Administration, port authorities, etc.); (2) a private company or agency (provided it has the legal authority to carryout the functions of the Single Window functions); or (3) a quasi-public or public-private organization.[36] Regardless of the organizational approach or form that is adopted, of course, it must have the mandate and authority of national law to operate the national Single Window.[37]

In those situations where a National Single Window is to be operated by a private[38] or a joint public-private entity, carefully drafted legal agreements need to be made between the government and those nongovernmental entities involved.[39] There should be a clear understanding of the authority delegated to the private entities involved and its limits. Provisions that ensure transparency and an appropriate form of corporate or company governance should be included.

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[34] *See* Smedinghoff, supra note 30, at 116-118. *See also* Monetary Authority of Singapore, Circular No. SRD TR 02/2005 (November 25, 2005), available at http://www mas.gov.sg/resource/legislation_guidelines/banks/circulars/ Circular2FA25Nov05.pdf (mandating that banking institutions use two-factor authentication for Internet banking transactions).

[35] Further discussion of this aspect of Single Window operations appears below in Subsection B-2, *Electronic Signatures and Cross-Border Authentication*.

[36] CEFACT Recommendation 33, *supra* note 3, at 10. It should be noted that within ASEAN, several of these approaches have been utilized.

[37] *Id.*; *see also* CEFACT Legal Group Paper, *supra* note 21, at 4.

[38] In the process of choosing a private entity, care should be taken to comply with all public procurement laws and regulations. This is particularly important, since these private entities will be entrusted with a significant responsibility for operating an important governmental function. For general guidance in this area, it may be helpful to consult several UNCITRAL texts: UNCITRAL Model Legislative Provisions on Privately Financed Infrastructure Projects (2003), available at http://www.uncitral.org/uncitral/en/uncitral_texts/procurement_ infrastructure/2003Model_PFIP html; and the UNCITRAL Legislative Guide on Privately Financed Infrastructure Projects (2000), available at http://www.uncitral.org/uncitral/en/uncitral_texts/procurement_infrastructure/2001 Guide_PFIP.html. *See also* UNCITRAL Model Law on Procurement of Goods, Construction and Services (1994), available at http://www.uncitral.org/uncitral/en/uncitral_texts/procurement_infrastructure.html. This Model Law is currently under revision (since 2004) and the working papers related to this ongoing work are available at http:// www.uncitral.org/uncitral/en/commission/working_groups/1Procurement html.

[39] Naturally, the authorization to enter into such agreements should be recognized in national law.

Finally, it will be important to develop agreements (end-user agreements) with parties interacting with the Single Window (suppliers, customs brokers, shippers, freight forwarders, financial facilities in more advanced Single Window models, etc.) These agreements should contain all of the contractual obligations of the parties (particularly where a private or quasi-private organization operates the Single Window), the extent of the liability of any party to a transaction, and so on. Consideration should be given to including a mediation or arbitration requirement (or both) in the event of a dispute arising between the parties. Finally, an end-user agreement may include certain limitation of liability provisions, provided that they do not violate law or public policy.

Liability Issues

It should be noted that the potential for legal liability might arise in several contexts in the operation of the Single Window. Perhaps the most obvious are those related to data processing errors and possible data breaches, such as those suggested above. In certain instances, for example, data processing errors can result in monetary losses to parties using the Single Window.[40] Naturally, this highlights the importance of the technological development of the Single Window to minimize the potential for damages and, as noted earlier, to avoid injuries related to problems in the area of information sharing. It is possible, too, that the use of inaccurate, incomplete, or incorrect data by a variety of those entities using the Single Window may result in multiple cases in which damages may occur.[41]

These issues can be compounded in the international context where the Single Window operates across borders. Buyers, sellers, shippers, freight forwarders, financial institutions, and others, as well as Single Window facilities in other countries, can suffer damages and may seek recourse from the Single Window operation(s) that may have caused these injuries. Some injured parties may be third parties who have not agreed to the provisions of an end-user agreement but nevertheless suffer some type of injury resulting from the operation of the Single Window. Consideration should be given to dealing with the legal implications resulting from possible injury to this group and these solutions may be similar to those that are currently in place for traditional import/export situations.

This discussion is not intended to be discouraging, merely realistic. Thus, it is important to consider these issues in examining the legal infrastructure for the Single Window and to address the potential for legal recourse at both the national and international levels. In terms of the organizational issues noted above, agreements between the Single Window facility and end-users can address such issues and include provisions for the limitation of liabilities and indemnification for damages. Similarly, at the international level, agreements[42] between Single Window operations that are interacting together should address these issues. Governments establishing a

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[40] Losses may also occur in terms of lost government revenues from taxes, duties, etc.

[41] *See* CEFACT Legal Group Paper, *supra* note 11, at 5.

[42] Depending on the organizational nature of the Single Window facilities involved, *e.g.*, a government entity or a private entity, different types of “agreements” may be used. Where Single Window facilities are operated by government agencies, liability issues may be addressed by contractual arrangements or as part of bilateral agreements between the governments involved.

Single Window facility may consider using agreements that include alternative dispute resolution mechanisms to avoid the possibility of costly litigation.

Competition Law Issues

There are two primary areas in which competition law may raise concerns and should be addressed. First, it is important when developing the legal infrastructure for the Single Window to consider the implications of a country's WTO obligations under the General Agreement on Tariffs and Trade (GATT.) Articles V, VIII and X[43] are of particular importance. The Single Window has the potential for enhancing and facilitating the efficiency by which its obligations are met under these GATT Articles. The transparency of Single Window operations, as related to the publication and administration, will be particularly important under Article X.

Second, concerns may be raised about the operation of a Single Window that relate to possible protectionism for local companies vis-à-vis foreign organizations or other anticompetitive activities. This highlights the importance of transparency for the Single Window operation. These concerns, if not addressed, can result in disabling effects on trade development and facilitation.

Electronic Documents

As noted in the introduction to this working paper, it contains a bias toward the use of modern Information and Communications Technologies. Although the principles contained in, for example, UN/CEFACT's Recommendation 33 and its forthcoming Recommendation 35 can be applied to the paper environment,[44] the use of Information and Communications Technologies is strongly supported in the ASEAN approach to its ASW development program.[45]

In the Single Window environment, much work has been done to create electronic documents that "match" paper documents used in the Customs Administration functions. As noted earlier, organizations such as the WCO and UN/CEFACT, among others, have focused on creating electronic messages and electronic records that would serve Single Window operations. And ASEAN's ASW approach has done the same with the ASEAN Data Model.

However, it is important that a national legal regime permit the use of such electronic documents, that is, that national law affirmatively confirm that there is functional equivalence between a paper document and an electronic document,[46] so that an electronic document (or record) is not

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[43] The text of the GATT is available at http://www.wto.org/English/docs_e/legal_e/gatt47_01_e.htm. These particular articles implicate Single Window operations as they do for traditional Customs Administration operations. Article V deals with "Freedom of Transit"; Article VIII, with "Fees and Formalities Connected with Importation and Exportation; and Article X, with "Publication and Administration of Trade Regulations." Further, the WTO is currently conducting a trade negotiation regarding these Articles. *See supra* note 14.

[44] *See* CEFACT Legal Group Paper, *supra* note 11, at 5.

[45] *See, e.g.*, Protocol to Establish and Implement the ASEAN Single Window, Article 8 (20 December 2006), available at http://www.aseansec.org/18005.htm; Agreement to Establish and Implement the ASEAN Single Window (December 2005), available at http://www.aseansec.org/18006.htm; e-ASEAN Framework Agreement (November 2000), available at http://www.aseansec.org/7820 htm.

[46] *See* CEFACT Legal Group Paper, *supra* note 11, at 6.

denied validity for legal purposes (including introduced into a court or other judicial proceeding) solely because it is in electronic form.[47]

There may be other reasons why an electronic document or record may not be considered valid as "evidence" in various proceedings. For example, Smedinghoff[48] asks six questions that should be answered in seeking to determine whether an electronic document might be accorded such status:

- Is the Transaction Authorized in Electronic Form?
- Will the Online Process Result in an Enforceable Contract?
- Are the Transaction Records Accessible to All Parties?
- Has a Valid Electronic Signature Been Used?
- Is the Transaction Trustworthy?
- Have Appropriate Electronic Records Been Retained?[49]

While not all of these questions would be appropriate for the Single Window facility, they might be important to the end users of the Single Window.

Furthermore, the area of functional equivalence between paper documents and electronic documents is one of the *sine qua non* aspects of moving to a "paperless" transactions environment. Thus, it is important for countries implementing the Single Window and contemplating the use of ICT to ensure that appropriate enabling national law exists to support the legal use of electronic records. In this respect, the UNCITRAL Model Law on Electronic Commerce[50] has become an international model in this area. But those States enacting national laws based on this UNCITRAL Model Law have not done so uniformly and have varied the provisions of the Model Law. It is important, to the extent that cross-border transactions are based

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[47] Article 5. *Legal recognition of data messages*, UNCITRAL Model Law on Electronic Commerce with Guide to Enactment 1996 with additional article 5 *bis* (1999), ("Information shall not be denied legal effect, validity or enforceability solely on the grounds that it is in the form of a data message." *See also* Article 11), available at http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf; Article 9, § 1, Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce') Official Journal L 178, 17/07/2000 P. 0001 – 0016 ("Member States shall in particular ensure that the legal requirements applicable to the contractual process neither create obstacles for the use of electronic contracts nor result in such contracts being deprived of legal effectiveness and validity on account of their having been made by electronic means."), available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32000L0031:EN:HTML; United States Uniform Electronic Transactions Act, §7 – Legal Recognition of Electronic Records, Electronic Signatures, and Electronic Contracts (National Conference of the Commissioners of the Uniform State Laws, 1999) ("(a) A record or signature may not be denied legal effect or enforceability solely because it is in electronic form. (b) A contract may not be denied legal effect or enforceability solely because an electronic record was used in its formation. (c) If a law requires a record to be in writing, an electronic record satisfies the law. (d) If a law requires a signature, an electronic signature satisfies the law."), available at http://www.law.upenn.edu/bll/archives/ulc/ fnact99/1990s/ueta99.htm.

[48] Smedinghoff, "E-Transactions: The Key Rules for Ensuring Enforceability," Electronic Banking and Commerce Report, Vol. 11, No. 5 (Thompson/West Legal Works, 2006.)

[49] *Id.*

[50] *See supra* note 25.

on national e-Commerce enabling laws, that they be carefully examined to ensure that those enactments are interoperable with similar laws in trading partner countries.

Intellectual Property Rights Issues

There are some instances in which it is useful to examine various intellectual property issues. In today's world, information and data can be valuable commodities, and the ownership of such information can give rise to intellectual property (IP) rights issues. In some countries, for example, government agencies other than the Customs Administration may claim ownership of certain data, such as trade data. As a result, these agencies may wish to exercise control over some types of information that flow through the Single Window. A careful examination of statutes and regulations regarding control or owners of such data should be undertaken.

This may be particularly important in those Single Window implementations where a private entity or a public-private entity operates the Single Window. In this case, the agreements with the operating entity should address the ownership of data flowing through the Single Window.

An additional intellectual property issue may arise where technology (hardware or software) is purchased for use in the Single Window facility. Care should be taken to ensure that the vendor has all the IP rights necessary (e.g., patents and copyrights) to sell or to license the product to the Single Window facility. Ordinarily, certain IP "warranties" should be provided to the Single Window facility in the purchase or license agreement. The legal risk here is that there may be third parties who have IP interests in or related to the technology being purchased by the Single Window.

ADDITIONAL LEGAL ISSUES

Data Retention

Data retention laws and policies differ considerably from country to country and at the international level. Nevertheless, an evaluation of national data retention requirements is essential to the operation of the Single Window. There may be several sources of law for retaining or archiving information and data. Where government information requirements are established in statutory law or regulation, it should be clear. Less clear, however, are the requirements that might be needed in the commercial law system of a particular country. This will be important to the users of the Single Window and, to the extent that a Single Window facility is the central facility for a region (such as the ASW may be), it will be important to develop a legal strategy that seeks the harmonization of such laws or regulations in the region (e.g., through a multilateral treaty or by individual State actions that harmonize the law in this area).

With respect to data retention generally, there is a difference between "personal" information and "business" information. There are records that must be kept, records that are forbidden to be kept, and records that may be destroyed if done in a timely fashion and in accordance with established procedures (if not, they must be kept.) An example of records forbidden to be kept is that, in Europe, keeping some kinds of personal information may be a violation of Article 8 of the

European Convention on Human Rights.[51] Examples of records that may be destroyed are frequent in matters resulting in litigation in the United States. In addition, some countries have rules that forbid tampering or dictate the manner in which particular kinds of data must be retained.

In many countries, terms such as "data-conservation principle" or "data-retention principle" ordinarily refer to a legal requirement that personal data be destroyed at the end of a specified period; this may be considered an aspect of the purpose-specification principle. As early as 1973, a Council of Europe resolution provided, "Rules should be laid down to specify the periods beyond which certain categories of information [stored in electronic data banks in the private sector] should no longer be kept or used."[52]

The Council of Europe's Convention on Data Protection[53] provides in Article 5, "Personal data undergoing automatic processing shall be … preserved in a form which permits identification of the data subjects for no longer than is required for the purpose for which those data are stored." After a brief flirtation with the idea that this "does not mean that data should after some time be irrevocably separated from the name of the person to whom they relate, but only that it should not be possible to link readily the data and the identifiers,"[54] most of the European documents now[55]

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[51] Convention for the Protection of Human Rights and Fundamental Freedoms, 4 Nov. 1950, CETS No. 5 (1950).

[52] Council of Europe, Comm. of Ministers, Res. (73) 22 on the Protection of the Privacy of Individuals vis-à-vis Electronic Data Banks in the Private Sector, 26 Sept. 1973.

[53] Council of Europe, Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, Strasbourg, 28 Jan. 1981, entered into force 1 Oct. 1985, CETS No. 108; Amendments to the Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, Strasbourg, 15 June 1999; Additional Protocol to the Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data Regarding Supervisory Authorities and Transborder Data Flows, Strasbourg, 8 Nov. 2001, entered into force 1 July 2004, CETS No. 181.

[54] Council of Europe, Explanatory Report on the Convention for the Protection of Individuals with Regard to Automatic Processing of Personal Data, para. 42.

[55] Even at the time of the Council of Europe Convention on Data Protection, other international documents called for stronger measures than merely making it no longer possible "to link readily the data and the identifiers." In particular, the Explanatory Memorandum included (pp. 21-49) in Organization for Economic Co-operation and Development, Guidelines on the Protection of Privacy and Transborder Flows of Personal Data (2001), states at 42:

> Finally, when data no longer serve a purpose, and if it is practicable, it may be necessary to have them destroyed (erased) or given an anonymous form. The reason is that control over data may be lost when data are no longer of interest; this may lead to risks of theft, unauthorised copying or the like.

The text of the OECD *Guidelines* does not expressly address data retention; rather, the above is presented as explanation of the ninth guideline:

> **Purpose Specification Principle**
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> 9. The purposes for which personal data are collected should be specified not later than at the time of data collection and the subsequent use limited to the fulfilment of those purposes or such others as are not incompatible with those purposes and as are specified on each occasion of change of purpose.

The later United Nations Guidelines for the Regulation of Computerized Personal Data Files, GA Res. 44/132, UN GAOR, 44th Sess., Supp. No. 49, UN Doc. A/44/49 (1989), also calls, in Principle 3, for specification of the purpose and use of a file "in order to make it possible subsequently to ensure that,"

support the position that the data must indeed be deleted and that rendering them no longer "readily" identifiable is insufficient.

While these examples relate primarily to personal information, they do point to the importance generally of adopting a clear approach to data retention related to the Single Window. Finally, data retention strategies may be important in the event that a legal dispute arises from the use of the Single Window. In such instances, a legal proceeding may require that data be provided as evidence and care should be taken to ensure as far as possible that policies are established and followed that will provide credible and reliable evidence in such proceedings.

Electronic Signatures and Cross-Border Authentication

In the era of electronic transactions, the use of "electronic signatures" (sometimes called "electronic authentication") in lieu of handwritten signatures has become increasingly important. This section of the Working Paper provides a synopsis of various legal considerations related to electronic signatures and provides a broader review than might be solely necessary for the ASEAN Single Window project. But since the ASW approach takes a longer view and seeks to include all stakeholders involved in international transactions,[56] this perspective seemed correct. Additionally, there were discussions of issues related to electronic signatures at the Second Meeting of the Legal and Regulatory Working Group in August 2008 that would apply to not only to government-to-government (G2G) and business-to-government (B2G), but also to business-to-business (B2B) related electronic transactions.[57]

Generically, signatures fulfill a number of different purposes or functions. It has been noted that electronic signatures, particularly "digital signatures" often provide more functions than handwritten signatures generally.[58] Thus when adopting an appropriate legal infrastructure for the use of electronic signatures, it is important to consider what functions are critical for the type of transactions involved. For example, handwritten signatures have been used on paper-based

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inter alia, the "period for which the personal data are kept does not exceed that which would enable the achievement of the purposes so specified."

[56] See supra paras. 1-2.

[57] See, ASEAN Secretariat, "Report of the Second Meeting of the Working Group on Legal and Regulatory Matters" (Kuala Lumpur, 16-17 August 2007), paras. 8, 16, 24.

[58] See generally "Possible future work on electronic commerce – Comprehensive reference document on elements required to establish a favorable legal framework for electronic commerce: sample chapter on international use of electronic authentication and signature methods," Note by the Secretariat, A/CN.9/630, United Nations Commission on International Trade Law, 25 April 2007, paras. 1-7, 23 (hereinafter "UNCITRAL Reference Note") available at http://www.uncitral.org/uncitral/en/commission/sessions/40th.html#second. This document and its five Addenda provide an extensive and thorough examination of electronic signatures and their legal effect in cross-border transactions as well as a discussion of the electronic signature practices adopted in many countries and regions. The final document will be published by UNCITRAL within the next several months. This material was provided to the Secretariat and to the members of the Legal and Regulatory Working Group at its second meeting in Kuala Lumpur, Malaysia, during August 2007; *see also* UNCITRAL Model Law on Electronic Commerce with Guide to Enactment with Additional Article 5 bis as adopted in 1998, paras. 53-56, available at http://www.uncitral.org/pdf/english/ texts/electcom/05-89450_Ebook.pdf.

customs documents for many years. In the electronic environment it might be asked what additional functions or security is needed beyond those provided by handwritten signatures. Further, it should be noted that electronic signatures are of many varieties. For example, the UNCITRAL Secretariat notes,

Electronic authentication and signature methods may be classified in three categories: those based on the knowledge of the user or the recipient (e.g., passwords, personal identification numbers (PINs)), those based on the physical features of the user (e.g., biometrics), and those based on the possession of an object by the user (e.g., codes or other information stored on a magnetic card). A fourth category might include various types of authentication and signature methods that, without falling under any of the above categories, might also be used to indicate the originator of an electronic communication (such as a facsimile of a handwritten signature, or a name typed at the bottom of an electronic message).[59]

In terms of technologies, a "digital signature" is merely one type of electronic signature, one that is generally considered to use asymmetric cryptography for authentication purposes, such as public key infrastructure systems.

Added to the use of these technologies is the potential for third-party certification for electronic communications that are intended to increase the reliability of a digital signature. The combination of a digital signature and such third-party certifications are often referred to as a "public key infrastructure" or PKI.[60] There are a variety of organizational or 'hierarchical' approaches for PKI and the level of the certifications provided.[61]

In the cross-border environment, it should be noted that there is no universally accepted standard for the type of electronic signature and authentication methodology that should be used. In fact, it has been suggested that the use of PKI in cross-border transactions creates significant difficulties from a legal viewpoint. For example, the UNCITRAL Secretariat points out in the Foreword to its Reference Note,

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[59] *Id*. at para. 16.

[60] *Id*., Add.1 at para. 13. The UNCITRAL Secretariat states,

> One solution to some of these problems is the use of one or more third parties to associate an identified signatory or the signatory's name with a specific public key. That third party is generally referred to as a "certification authority", "certification services provider" or "supplier of certification services" in most technical standards and guidelines (in the UNCITRAL Model Law on Electronic Signatures, the term "certification service provider" has been chosen). In a number of countries, such certification authorities are being organized hierarchically into what is often referred to as a "public key infrastructure" (PKI). Certification authorities within a PKI can be established in a hierarchical structure, where some certification authorities only certify other certification authorities, which provide services directly to users. In such a structure, some certification authorities are subordinate to other certification authorities. In other conceivable structures, all certification authorities may operate on an equal footing. In any large PKI, there would likely be both subordinate and superior certification authorities. Other solutions may include, for example, certificates issued by relying parties.
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> [Footnotes omitted.]

[61] *Id*. paras. 14-18.

> It has been observed that, from an international perspective, legal difficulties are more likely to arise in connection with the cross-border use of electronic signature and authentication methods that require the involvement of third parties in the signature or authentication process. This is the case, for instance, of electronic signature and authentication methods supported by certificates issued by a trusted third-party certification services provider, in particular digital signatures under a public key infrastructure (PKI).[62]

Additionally, there are many practical difficulties that may arise in the implementation of such PKI systems.[63] The concepts of "functional equivalence"[64] and "technological neutrality"[65] have been important to the development of global electronic commerce and are almost fundamental principles in many international texts.[66] Countries and regions have adopted a number of differing approaches to electronic signatures that espouse both of these concepts. Three main approaches have been identified as to how countries have implemented electronic signatures: (1) the minimalist approach, (2) the technology specific approach, and (3) the two-tiered or two-pronged approach.[67]

The minimalist approach [68] provides the widest legal recognition for all types of electronic signatures and follows the policy of 'technology neutrality.' In those jurisdictions in which this approach is followed, the determination of whether a particular type of electronic signature is to be considered reliable depends in large part on the essence of the underlying transactions and all the surrounding circumstances. Countries adopting this approach to their legal infrastructure are not limited by existing technologies for electronic signatures and can rapidly accommodate innovations or changes in technology that provide increased reliability and lower costs than existing approaches provide. It also provides enhanced flexibility for both governments and the private sector in meeting specific needs of various sectors.

Some countries have adopted a "technology-specific" approach to electronic signatures in which the legislature requires the use of one particular technological solution.[69] In most cases, a PKI solution has been favored in these enactments. This approach can introduce some inflexibility and increased costs for electronic transactions that may not need this level of security and, in some

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[62] UNCITRAL Reference Document, Foreword at 4.

[63] UNCITRAL Reference Note, Add. 1, paras. 27-29 and accompanying footnotes.

[64] That is, in its simplest terms, that the electronic method chosen for a particular transaction should be the equivalent of the paper method.

[65] It has been an important idea in the development of electronic commerce that no one technology or technological approach be mandated for all circumstances or transactions. One of the reasons for this is to avoid the problem of hindering the development and implementation of new and more efficient and secure technological innovations.

[66] See generally., UNCITRAL Model Law on Electronic Commerce with Guide to Enactment with Additional Article 5 bis as adopted in 1999, available at http://www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf; Electronic Communications Convention, *supra* note 17; *see also* note 42, *supra*.

[67] UNCITRAL Reference Note, Add.2, para. 5.

[68] *Id.*, paras. 6-12.

[69] *Id.*, paras. 13-15.

instances it goes well beyond the level of reliability and/or security that would be provided for the same transactions when they are paper-based. Such requirements may also create difficulties for private sector cross-border transactions where parties in other countries may not have similar requirements.

Finally, a two-tiered model has been adopted in some countries and regions.[70] Under this model, the electronic signature law provides minimum recognition all types of such signatures in the first instance, but then provides a higher level of legal recognition to those that provide a higher level of security such as digital signatures in a PKI system. Care must be taken when implementing this approach since it can create interoperability problems in cross-border trade and can increase the cost of Single Window and private sector transactions. And if such methods are legislatively adopted as the *only* electronic signature method that provides judicially cognizable reliability and security for all electronic transactions, serious legal difficulties may arise.[71]

Given these observations, it is likely that further consideration should be given to the types of electronic signatures and authentication measures that should be used in any particular country's electronic commerce legal environment. It is important to adopt approaches that are interoperable, technology neutral, and, when looking at cross-border transactions especially, processes that are nondiscriminatory.[72] For e-Government activities, such as the Single Window, it may be appropriate to utilize a high-level digital signature system (e.g., a PKI approach) in spite of its difficulties in cross-border environments. But further study is necessary to determine which

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[70] *Id.*, paras. 16-19.

[71] See UNCITRAL Reference Note, Add.1, para. 44. Here, the Secretariat notes,

> It is important for legislators and policymakers to bear in mind these widespread business practices when considering regulating electronic authentication and signature. Stringent requirements for electronic authentication and signature, in particular the imposition of a particular method or technology, may inadvertently cast doubt as to the validity and enforceability of a significant number of transactions that are entered into every day without the use of any particular kind of authentication or signature. That, in turn, may stimulate parties acting in bad faith to avoid the consequences of obligations they freely assumed by questioning the authenticity of their own electronic communications. It is unrealistic to expect that imposing a certain high level of authentication and signature requirements would eventually lead all parties to actually use them on a daily basis. Recent experience with sophisticated methods, such as digital signatures, has shown that concerns about cost and complexity often limit the practical use of authentication and signature techniques.

[72] Citing an OECD study, the UNCITRAL Secretariat notes that a non-discriminatory approach to foreign signatures and certification services means that,

> The legislative frameworks do not deny legal effectiveness to signatures originating from services based in other countries as long as these signatures have been created under the same conditions as those given legal effect domestically. On this basis, the approach appears to be non-discriminatory, as long as local requirements, or their equivalent, are met.

UNCITRAL Reference Note, Add.3, para. 13; citing Organization for Economic Cooperation and Development, Working Party on Information Security and Privacy, *The Use of Authentication across Borders in OECD Countries*

(DSTI/ICCP/REG(2005)4/FINAL), at 5, available at http://www.oecd.org/dataoecd/1/10/35809749.pdf.

combination of approaches may be the most beneficial for ASEAN and its Member- States with respect to the ASEAN Single Window.[73]

Electronic Transfer of Rights in Goods (e-Documents of Title)

As noted above,[74] the ASEAN Secretariat's model for the ASW contemplates an advanced view of the opportunities for the use of ICT in the context of the Single Window that includes a broader stakeholder group.[75] While not addressed directly, the potential for improving business as well as Single Window processing efficiencies in the global supply chain exists through the electronic transfer of rights in goods (referred to as electronic transferable records and electronic transferable, negotiable and non-negotiable, instruments, and electronic documents of title.) It is not difficult to imagine the advantages if suppliers, brokers, shippers, freight forwarders, warehousemen, port operations, and banks could reasonably rely on electronic documents of title, negotiable transport documents, bills of lading, etc.

The state of the law internationally for electronic transferable records, however, is not yet at a point where agreement exists about how this can be accomplished, despite its potential. There have been regional and individual country efforts in this area.

The Organization of American States (OAS), for example, has pursued initiatives related to the transfer of rights in tangible goods that involve the potential use of electronic communications. In 2002, the OAS adopted the Inter-American Uniform Through Bill of Lading for the International Carriage of Goods by the Road (Negotiable)[76] at its 6th Inter-American Specialized Conference on Private International Law (CIDIP VI[77]), held in Washington D.C. A key objective for creating this uniform bill of lading was to unify contract law in this area, so as to enhance the predictability in the legal process related to the transportation of import and export goods when the mode of transportation is by road.[78]

Two areas of this convention deal with electronic issues. First, Article 2 defines a "writing" as including "a written document, telegram, telex, telephonic facsimile (fax), electronic data interchange, or *a document created or transferred by electronic means*."[79] [*Emphasis added*.]

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[73] See generally, R. Field, *Electronic Signatures and Mutual Recognition*, Workshop for Legal Matters on the ASEAN Single Window, Kuala Lumpur, Malaysia, January 2008.

[74] See *supra* ¶2.

[75] "Essential Features of the ASEAN Single Window," HIGH LEVEL WORKSHOP ON THE IMPLEMENTATION OF THE SINGLE WINDOW, Hanoi, Vietnam, 2-4 October 2006, at 30.

[76] Inter-American Uniform Through Bill of Lading for the International Carriage of goods by the Road (Negotiable), available at http://www.oas.org/DIL/CIDIP-VI-billoflanding-Eng htm.

[77] *Conferencias Especializadas Interamericanas sobre Derecho Internacional Privado.*

[78] See "Summary," at http://www.oas.org/DIL/CIDIP-VI-billoflanding-Eng_summary.htm.

[79] Article 2.1.9, *supra* note 76.

Additionally, this treaty provides for the possibility of electronic signatures, as well as other signature types, if authorized by applicable law.[80]

The OAS has adopted a Model Inter-American Law on Secured Transactions,[81] including an appendix on electronic documents and signatures. Of particular interest is the adoption of the concept of security interest[82] as in Article 9 of the U.S. Uniform Commercial Code, which is foreign to English law and most other legal systems. Each state party must operate a registry that includes an electronic folio.[83]

The Annex, Uniform Inter-American Rules for Electronic Documents and Signatures (IREDS), to this Model Law was approved by resolution CIDIP-VI/RES. 6/02 at this diplomatic conference.[84] These Rules support the use of electronic communications technologies for both the Inter-American Uniform Through Bill of Lading for the International Carriage of Goods by the Road (Negotiable) and the Model Inter-American Law on Secured Transactions and to "serve as part of an integrated body of international commercial law."

Most recently, the OAS is considering the use of electronic registries in anticipation of its 7th Inter-American Specialized Conference on Private International Law (CIDIP VII.).[85] A number of international nongovernmental organizations have created systems to address this area. Both Bolero[86] and the Comité Maritime International[87] offer a contractual approach designed to create by contract an effect equivalent to an electronic bill of lading.

Some countries have sought to develop approaches to electronic transferable records. Korea, for example, has initiated an "integrated" e-Trade approach that includes national legislation that

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[80] Article 18.1 provides, "The parties agree that any signature on or by this Bill of Lading may appear handwritten, printed on facsimile, perforated, stamped in symbols, or registered in any other mechanical or electronic means authorized by the applicable law. The parties agree to be bound by the same as if they had physically handwritten their signatures."

[81] http://www.oas.org/DIL/CIDIP-VI-securedtransactions_Eng htm. This Model Law was approved by the Plenary Meeting of Delegates on 8 February 2002 as resolution CIDIP-VI/RES.5/02, which can be accessed at http://www.oas.org/main/main. asp?sLang=E&sLink=http://www.oas.org/dil/. The Model Law itself may be accessed (in Spanish and English) at http://www.oas.org/dil/Annex_cidipviRES.%205-02.pdf.

[82] *Id.*, art. 2.

[83] *Id.*, art. 43.

[84] http://www.oas.org/main/main.asp?sLang=E&sLink=http://www.oas.org/dil/.

[85] See CIDIP VII Working Groups, available at http://www.oas.org/dil/CIDIP-VII_stage3 htm; *see generally* Everette Wolhers, "The Registry: Essential Element in Secured Transactions", CIDIP-VII Working Group on Secured Transactions Registries, available at http://64.233.169.104/search?q=cache:AEDpMJI-ny8J:oas.org/dil/Everett_Wholers_paper.pdf+oas+secured+transaction+registry&hl=en&ct=clnk&cd=1&gl=us&client=safari.

[86] http://www.bolero.net/.

[87] http://www.comitemaritime.org/. The CMI Rules for Electronic Bills of Lading are available at http://www. comitemaritime.org/cmidocs/rulesebla html.

upgrades its legal infrastructure for international trade.[88] For transferable electronic documents, Korea has established a national electronic repository (registry) for such records and electronic transfers of title in goods are made through this registry.[89]

In the United States, Article 7 of the Uniform Commercial Code (UCC) on warehouse receipts, bills of lading, and other documents of title was based on two earlier uniform acts, the Uniform Warehouse Receipts Act (1906) and the Uniform Bills of Lading Act (1909). Although the UCC was first published in 1951, Article 7 was not revised until 2003. The revisions are concerned in particular with electronic documents of title.

The issues addressed in revised Article 7 include recognition of electronic documents of title, extension of the statute of frauds, authentication of electronic original documents and interchangeability between electronic and paper ("tangible") documents of title. Electronic records and signatures are now treated as equivalent to tangible documents and written signatures. Article 7 expressly modifies, limits, and supersedes the U.S. federal Electronic Signatures in Global and National Commerce Act (E-SIGN),[90] as permitted in the federal act.

Building on provisions for investment securities under Article 8 and for secured transactions under Article 9 of the UCC, Article 7 provides that a person has control of a document of title "if a system employed for evidencing the transfer of interests in the electronic document reliably establishes that person as the person to which the electronic document was issued or transferred."[91] Such a system exists when it establishes a "single authoritative copy ... which is unique, identifiable and ... unalterable."[92] Copies that are not authoritative, including copies of the authoritative copy, must be readily identifiable as not being authoritative.

The single authoritative document may be identified by a single custodian of the electronic record, who enters all transfers of the document and identifies the person in control on its records; by encryption technology, which may provide other methods for meeting these standards; or by a hybrid system of encryption and custodian. Further, electronic documents of title may be converted to paper documents of title and vice versa. In particular, Article 7 requires that an electronic document state that it is a substitute for the tangible document.

Today, there is growing pressure internationally for the development of an approach to transferable electronic records so that an international standard will exist that provides for legal certainty and predictability.[93] One solution that is getting attention is the use of electronic registry

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[88] *See* Dr. Jae-hyun Lee, "Korea's National Single Window for Paperless Trading," Presentation at a Regional Workshop of the United Nations Economic and Social Commission for West Asia (July 2006)

[89] Act on Facilitation of Electronic Trade, Act No. 77, 23 December 2005.

[90] 15 U.S.C. § 7001 *et seq*.

[91] Uniform Commercial Code, sec. 7-106(a).

[92] *Id.*, sec. 7-106(b)(1).

[93] For example, the United States Government has filed a proposal with the United Nations Commission on International Trade Law suggesting that the Commission authorize the Secretariat and its Working Group on Electronic Commerce to undertake work in this area. (The official document is not yet available

systems.[94] An example is the recent UNIDROIT Convention on International Interests in Mobile Equipment[95] (the "Cape Town Convention.") The Convention created an electronic registry system to give notice to third parties of the existence of secured interests in movable property.

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at the UNCITRAL website due to the need for translation into the 6 official UN languages. An unofficial copy is available from IRCG.)

[94] Professor Amelia Boss, "Becoming Operational: Electronic Registries and Transfer of Rights," UNCITRAL CONGRESS – MODERN LAW FOR GLOBAL COMMERCE (July 2007). The paper is available under the program topic "Electronic Commerce: Going Beyond Functional Equivalence" and may be accessed at http://www.uncitral.org/uncitral/en/ about/congresspapers.html.

[95] Convention on International Interests in Mobile Equipment (Cape Town 2001) available at www.unidroit.org/english/conventions/mobile-equipment/main.htm; *see also* Protocol to the Convention on International Interests in Mobile Equipment on Matters specific to Aircraft Equipment (Cape Town, 2001), also available at this website.

4. Specific International Legal Standards

In the Single Window development process, international standards are considered critical to success. This is true for the technical aspects of the Single Window and for developing a robust legal infrastructure for it.[96] Using international standards can increase the potential for cross-border interoperability. A variety of intergovernmental and international organizations are working to create international standards for the Single Window and others whose work can be helpful to those seeking to develop Single Window facilities.

For the discussion in this paper, the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)[97] and the United Nations Commission on International Trade Law (UNCITRAL)[98] are particularly relevant.[99] Regarding UN/CEFACT, the CEFACT Legal Group and the International Trade and Business Processes Group (TBG15) are collaborating, as noted earlier in this paper, on the development of Recommendation 35, Legal Framework for the International Trade Single Window. This UN/ECE Recommendation will provide guidance to governments on the legal issues that may arise in the creation and operation of a single window and should be analyzed and addressed. Issues that may be important in these efforts are highlighted in the UN/CEFACT Legal Group paper discussed earlier;[100] these issues have already been discussed.[101]

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[96] *See e.g.*, CEFACT Recommendation 33 *supra* note 3 at 4. Regarding technical standards, Recommendation 33 states,

> When implementing a Single Window, governments and trade are strongly encouraged to consider the use of existing recommendations, standards and tools that have been developed over the past number of years by intergovernmental agencies and international organisations such as UNECE, UNCTAD, WCO, IMO, ICAO and the ICC.

[97] *See supra* note 6.

[98] *See supra* note 16.

[99] Certainly, the work being done or proposed in other international organizations, such as the World Customs Organization, The United Nations Commission for Trade and Development, the International Maritime Organization, and others are important as well.

[100] *See supra* note 11.

[101] *See supra* Paras. 22-49.

This work will proceed through the CEFACT Open Development Process, which will fully examine the issues raised in the Recommendation. This review process will include input from CEFACT's International Trade & Business Processes Group, TBG4 (Customs), so that the relevance of the work to customs organizations involved in the development of the Single Window is assured.

The United Nations Commission on International Trade Law (UNCITRAL) work program will also be relevant to single window development. Its mandate is "to further the progressive harmonization and unification of the law of international trade." It is the "core legal body within the United Nations system for international trade law."[102] It has developed a series of international legal texts that can provide guidance for the development of the ASW. Of particular value are the United Nations Convention on the Use of Electronic Communications in International Contracts[103] and Model Law on Electronic Commerce.[104] Each of these texts presents a clear international standard and can be used in analyzing the legal infrastructure requirements for the single window.

Additionally, the UNCITRAL Secretariat prepared a note[105] on possible future work in the electronic commerce domain that was presented to the commission at its 39th plenary session in Vienna in July 2006. Among the topics considered by the Commission for future work were

- Authentication and cross-border recognition of electronic signatures
- Liability and standards of conduct for information service providers
- Electronic invoicing and legal issues related to supply chains in electronics
- Transfer of rights in tangible goods and other rights through electronic communications
- Unfair competition and deceptive trade practices in electronic commerce
- Privacy and data protection in electronic commerce

Other elements for a sound legal framework for electronic commerce include

- Protection of intellectual property rights
- Consumer protection in electronic commerce
- Unsolicited electronic communications (spam)
- Cybercrime

Many of these e-commerce legal issues have been mentioned earlier in this paper as having implications for the single window. The significance of these issues for seeking to implement international standards in the ASEAN Single Window (or any national single window) is that work still needs to be done in legal infrastructure development. The commission did authorize the

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[102] *See supra* note 23.

[103] *See supra* note 24.

[104] *See supra* note 25.

[105] *See* Note by the Secretariat, A/CN.9/604, "Possible future work in the area of electronic commerce" (9 May 2006) available at http://www.uncitral.org/uncitral/en/commission/sessions/39th.html.

Secretariat to prepare a paper on authentication and cross-border recognition of electronic signatures, the first topic noted above. The Secretariat prepared a reference paper[106] on this topic, and the findings were briefly discussed above.[107]

Even with respect to the enactments of UNCITRAL's Model Law on Electronic Commerce, there are difficulties. It has been noted that although many States have based their e-Commerce legislation on this Model Law,[108] adoption has not been uniform. Therefore, care must be taken in the assumptions made about the legal requirements for electronic commerce transactions even in states that have adopted this international standard.

Finally, the new work being undertaken by the joint WCO-UNCITRAL Legal Working Group should be followed closely. The legal reference document on the Single Window that is the primary focus of this group should provide more certainty about the emerging international legal standards in the Single Window area.[109]

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[106] *See supra* UNCIRAL Reference Note, note 52.

[107] *See supra* paras. 48-57.

[108] *See supra* note 18.

[109] The proposed date of the first meeting of this Legal Working Group is September 2008.

5. General Conclusions

An obvious conclusion from the foregoing discussion is that legal initiatives (laws, regulations, protocols, etc.) are needed to support the ASW. Statutes governing commercial transactions may have to be adapted for electronic transactions, and new laws, regulations, and protocols may also have to be enacted. ASEAN Member States are making strong progress in this area. This will facilitate cross-border transactions and ensure interoperability for exchange of information between the public and private sectors.

For ASEAN and its Member States, two factors are essential in the future in developing an e-enabling legal infrastructure for both the ASEAN Single Window and National Single Windows: harmonization and interoperability.

These two factors will play a critical role in the ultimate success of the ASW and in many elements of the e-ASEAN Roadmap. While this paper is focused primarily on the legal aspects of the ASEAN Single Window implementation, it should be understood that the Single Window legal framework, whether the National or the ASEAN Single Windows, does not exist in a vacuum. Indeed, the specific objective is to achieve interoperability, both technically and legally, between the National and ASEAN Single Window facilities.

To achieve an e-enabling legal environment for the ASW, it is important to take into account other aspects of the legal infrastructure in order to move forward in a way that will achieve the broader goals of the ASEAN Member States. Developing the right legal infrastructure for the ASW at the beginning will enhance all aspects of the e-ASEAN Framework for the longer term.

Additionally, a key point mentioned numerous times in the earlier sections of this paper is that it is important to adopt international standards so that the ASW and the ASEAN Member States will have a legal infrastructure that is interoperable not only between the these States, but also globally. Meeting this objective will have significant benefits for developing and enhancing regional and global trade competitiveness. For example, companies doing business with businesses in other countries frequently look at the legal environment of a particular country to determine the level of risk they may have to assume if they decide to enter business relationships in that country. Predictability and certainty, in a legal sense, are never absolute, but where uncertainty about the legal infrastructure exists, a country may not achieve an optimal outcome in trade development.

However, it is important to examine the particular international standards being considered for adoption, because there may be a number of alternative approaches for implementing these

standards. For example, as noted above,[110] there are several international standards in the area of electronic signatures.[111] Some regions have adopted a more regulatory approach to e-signatures. [112] Others have taken a more flexible approach, so that the use of a particular type of electronic (or digital) signature is the one that is appropriate to the particular transaction.[113] Thus, it will be necessary to review the approaches taken by ASEAN Member States in this area to determine how they will interoperate with other ASEAN countries' legal regimes, and to recommend, if necessary, changes that may enhance cross-border transactions at least with respect to issues of mutual recognition.

Within the ASEAN community it has been noted in several studies for the Secretariat assessing the legal and regulatory environment for electronic transactions that much more work is needed in the area of developing the appropriate legal infrastructure. For example, while six Member States have enacted e-Commerce laws that are based on the UNCITRAL Model Law on Electronic Commerce, these enactments are different enough that it is uncertain that any country's statute could support cross-border transactions (although they may be effective domestically.)

As late as July 2007, one study concluded, *inter alia*, that "ASEAN currently does not have the adequate legislative and regulatory framework for the cross-border transactions, for mutual recognition of information being transmitted in electronic or digital format."[114] Naturally, significant progress has been made since the 2001 e-ASEAN Reference Framework was published despite the resource limitations faced by the Secretariat and individual countries in ASEAN.

Finally, it may be possible to utilize ICT methods within the Legal and Regulatory Working Group that may expedite the process of completing the legal infrastructure work that is necessary and to reduce at least some of the costs associated with this aspect of the project. Further discussion of these approaches is recommended.

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[110] *See supra* paras. 48-57.

[111] UNCITRAL Note by the Secretariat, *Comprehensive reference document on elements required to establish a favourable legal framework for electronic commerce: sample chapter on international use of electronic authentication and signature methods*, A/CN.9/630 (and 5 Addenda) (25 April 2007), available at http://www.uncitral.org/uncitral/en/commission/sessions/40th html#second.

[112] *See* Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures, L 13/12 EN Official Journal of the European Communities 19. 1. 2000, available at http://eur-lex.europe.eu/LexUriServ/site/en/oj/2000/1_013/1_01320000119 en00120020.pdr. (It may be noted that the implementation of this Directive in member countries has been different and this has caused some concern, from a business viewpoint at least, in cross-border transactions.

[113] *See generally* United States Uniform Electronic Transactions Act (National Conference of the Commissioners of the Uniform State Laws, 1999), available at http://www.law.upenn.edu/bll/archives/ulc/fnact99/1990s/ ueta99.htm.

[114] ASEAN Single Window Preparedness Survey Summary Report, Draft Version 2.0, at 20 ¶ 1 (July 12, 2007). This report also noted that "The current legislative and regulatory framework is still inadequate to support cross-border transactions using Information and Communication Technology." *Id.* ¶ 8. This study made other similar observations and recommendations and noted that there was an "Urgent need to develop a robust and reliable legal framework that could support cross-border secured transactions for intra-ASEAN as well as extra-ASEAN [transactions]. *Id*. at 24 ¶ 6.

Appendix. Technical Status

The following materials summarize the current approach to the technical aspects of the ASW as described in various papers (such as the Secretariat's Operational Functionality paper) and reports of the Technical Working Group. It is intended provide a basic understanding of the technical development effort against which it is possible to benchmark the legal issues that will need to be addressed for the ASW.

The ASW will utilize modern information technology to create a 21st century trade information system. This system will establish an integrated environment for the single processing of data and information for certain elements of customs processing. "The ASW is the secured environment where NSWs integrate and operate. The ASW constitutes a regional facility to enable a seamless, standardized and harmonized routing and communication of trade and customs-related information and data for customs clearance and release from and to NSWs. Trade and related customs data and information will stay within, and belong to respective Member States." [115]

The ASW will consist of a network of hardware, software, databases, and communications technology that will simplify and expedite information flows between government and industry, and harmonize and standardize data and information relevant to the Single Window. The ASW will benefit governments and trade participants through faster clearance and release (reduced delays), increased revenue, improved trade compliance, enhanced security, and increased international competitiveness. In the longer-term, ASW can be a key element in the ASEAN countries' progress towards enabling cross-border paperless trading.

The ASW will provide substantial benefits to its participants, including standardized business processes of processing (receipt, processing and provision of information and data; communication, dissemination, cross-border exchange of information and data; and mutual recognition of completeness of provided and processed information). [116] It will streamline the processing of cross-border transactions of international supply chains [117] ASW functions will generate substantial value in any commercial transaction, which typically involve several parties residing in more than two jurisdictions, and the intervention of more than two NSWs [118] It is

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[115] Second Meeting of the ASW Steering Committee (April 7-9 2008, Bali, Indonesia); Draft Technical Proposal of the ASW Pilot Project 4 p 13

[116] Draft Technical Proposal of the ASW Pilot Project 6 p 18.6

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[118] OF 10 p 26

expected that the ASW will save resources with the centralization of standard data and information, such as communication and messaging protocols [119]; the regional SW facility is "considered more cost and time efficient than the conventionally one-to-one interaction" [120] It will make use of economies of scale and scope [121]

ASW Technology

Information *technology* describes the combination of computer technology (hardware and software) with telecommunications technology (data, image, and voice networks). The ASW will utilize information technology to improve and streamline the trade business processes among member countries and trading partners. Participants in the ASW in each member country will include Customs Administration and other government agencies, the trade community, and the Transport, Banking, Insurance and other industries.

The ASW will be constructed according to an i*nformation systems architecture,* which provides a unifying framework into which people with different perspectives can organize and view the fundamental building blocks of the information system. The complexity of the information system is addressed using *data, application, network, technology* and *security* architectures.

The proposed major features of the NSW and ASW in cross-border transactions will include:

- A central repository of documents and information by economic operators
- A central repository of international codes, standards, conventional codings
- A central library of business processes of registered users
- A central repository of Reference Tables for the expeditious clearance of shipments
- A central registry of communication protocols, messaging, interfacing, routing of information flow [122]
- A central registry of business rules and rules of functions interactions by end users

Users—It is envisioned that the ASW will include these potential users: [123]

- Traders, transport and logistics operators, and freight forwarders
- Economic operators such as manufacturers, producers, banking institutions
- Public and private service providers, investors
- Regulatory bodies and government agencies of ASEAN economies
- Members of the public

Data in the System -- ASW data, information, and records will be created, stored, and processed primarily in electronic form. In expediting the import and export of goods, the ASW will process

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[120] OF 7 p 18

[121] OF 17 p 60

[122] OF 6 p 18

[123] OF 3 p 12

a variety of trade-related data and information such as import/export declarations and cargo inspections, purchase orders, and invoices between Customs and buyers and sellers. The ASW will include regulatory and economic data and information, as well as at least 474 documents by Customs, Transport, Regulatory Agencies, and Control Agencies. [124] ASW will contain data elements of the ASEAN Customs Declaration document, the CEPT Certificate of Origin (CEPT Form D), Preferential Certificates of Origin (Form E of the ASEAN-China FTA and Form AK of the ASEAN-Korea FTA). [125]

Data and information parameters may also come from the following documents: non-preferential CO, Transport documents (B/L, Letter of Transport for land transport, Manifest, Packing List), Insurance, Permits and Licenses by governmental agencies (for Agro products, Technical Standard Conformance, Phyto-sanitary and Sanitary purposes, Veterinary and Fishery purposes, Public Health, Food Securities. [126]

The trade data system will contain large amounts of sensitive information that requires protection, including personally identifiable information (PII), trade-sensitive, business confidential, law enforcement and information related to national security.

***Applications*—**The ASW will include communication protocols, messaging protocols, interfacing, routing of information flow [127] IT will enable standardized business processes of processing (receipt, processing and provision of information and data; communication, dissemination, cross-border exchange of information and data; and mutual recognition of completeness of provided and processed information). [128]

It will utilize applications for automatic data mapping. [129] Protocols and Messages will be efficient and standardized on the basis of existing standards being used by businesses and industries. It will have a high level of data harmonization to secure a common, regionalized and standardized language of communication.[130] UNeDocs and the World Customs Organization (WCO) data model provide global reference models for cross-border information exchange.

This will enable an effective dialogue and interaction among the NSWs. The ASW will utilize standardized interface protocols of processing systems of end users (governmental agencies, economic operators, logistics operators, traders, investors).[131]

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[124] OF 9 p 25

[125] Draft Technical Proposal of the ASW Pilot Project 1 p 1(a) and 2 p 4(a)

[126] Draft Technical Proposal of the ASW Pilot Project 8 p 19.1

[127] OF 6 p 18

[128] Draft Technical Proposal of the ASW Pilot Project 6 p 18.6

[129] Draft Technical Proposal of the ASW Pilot Project 5 p 18.3

[130] OF 12 p 35-36

[131] Draft Technical Proposal of the ASW Pilot Project 5 p 18.5

Network -- The ASW will consist of a network of hardware, software, databases, and communications technology between and among its member countries, trade participants, and other participating organizations. Networked systems are built using *interfaces*. The ASW will enable data transmissions between and among member states and trade participants. *Interfaces* are created both to other systems and applications, as well as to the actual users. They represent how the ASW interacts with people and other systems. The ASW will utilize standardized interface protocols of processing systems of end users (governmental agencies, economic operators, logistics operators, traders, investors).[132]

***Technology*—**The ASW technology requirements include:[133]

- Robust IT infrastructure such as physical equipment for information processing and communication (servers, routers) and advanced applications which enable interactive processing of data and information. Such infrastructure also comprises the telecommunications backbones. [134]
- Physical and soft infrastructures for data protection, storage, processing and communication, data management and for disaster management. [135]

Major Operational Features of the ASW[136]—The features described below make the ASW operational and functioning on the basis of international best practices and standards [137] It will ensure interconnectivity and interoperability on the basis of international standards [138]

Regional Converter/Router [139]

A regional converter of transactions, documents, data, and information (enquiry, data channeling and others) will be conveyed to designated channels and identified end-users. It will put information and data into a proper format on the basis of international standards. It will facilitate trade through simplification of connections and channeling of information within the ASEAN environment.

Functional Integrator [140]

This is the core of the trade facilitating feature. It will enable streamlined processing of standardized and harmonized information related to cargo and shipments, and will facilitate operational and processing linkages between NSWs.

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[132] Draft Technical Proposal of the ASW Pilot Project 5 p 18.5

[133] OF 12 p 33

[134] OF 12 p 33

[135] OF 12 p 33

[136] OF 8 p 23; OF 21 p 68

[137] OF 9 p 24

[138] Draft Technical Proposal of the ASW Pilot Project 3 p 9

[139] OF 8 p 23

[140] OF 9 p 23

Operational Synchronizer [141]

This will facilitates communication, interface and messages among the NSWs, and makes interfaces of systems possible.

Hardware—The ASW will include a network of communication lines, a virtual private network (VPN), routers and switches, firewalls, hubs (a common connection point for devices on a network used to pass data from one device (or segment) to another), servers (supports services provided across a network, such as database, Web, and application servers) and computer workstations. Mobile devices such as laptop computers and PDFs may be included in the network.

Software—Software will support network interconnection, including software for firewalls, servers and computer workstations.

Information Security—Security controls are implemented to protect the confidentiality, integrity and availability of the connected systems and the data that will pass between them. They must be in place and configured correctly. Concerns about the risk of failure of a multi-lateral network demand a high level of security. [142] Standardized security protocols (technical and legal) will be utilized for request of information, receipt of information, processing of information, dissemination of information to identified users. [143]

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[141] OF 9 p 23

[142] OF 12 p 37

[143] Draft Technical Proposal of the ASW Pilot Project 6 p 18.10