ECONOMIC COMMISSION FOR EUROPE

United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)

Recommendation and Guidelines on Single Window Interoperability

Supporting Cross Border Interoperability of Trade Regulatory Single Window Systems

<mark>DRAFT*</mark> Recommendation No. 36

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<mark>[UNLOGO]</mark>

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The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)
Simple, Transparent and Effective Processes for Global Commerce

UN/CEFACT's mission is to improve the ability of business, trade and administrative organizations from developed, developing and transitional economies to exchange products and relevant services effectively. Its principal focus is on facilitating national and international transactions through the simplification and harmonization of processes, procedures and information flows, and so contribute to the growth of global commerce.

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SINGLE WINDOW INTEROPERABILITY

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Supporting Cross Border Interoperability of Trade Regulatory Single Window Systems

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146 1.   Introduction

147 Theoretical models, practical evidence and operational experience demonstrate the introduction of
148 a trade regulatory Single Window facility could significantly improve the performance of the
149 international supply chain. Enhancing and simplifying the exchange of information between the
150 trading community (and trade services providers) and government has brought significant benefits
151 in the administration of international trade, and in many cases has contributed to the growth of global
152 commerce and assisted economic development with wealth and employment creation.

153

154 UN/CEFACT Recommendation 33 – Establishing a Single Window, and its Guidelines – offers guidance
155 and advice on the establishment of a facility enabling trade-related information and/or documents
156 to be submitted only once electronically at a single entry point. Because the process of introducing a
157 Single Window is complex and raises issues that must be tackled to realize the optimum benefits,
158 UN/CEFACT, in response to requests from end users (both existing and potential), stakeholders and other
159 interested parties, developed and published two additional Recommendations.

160

161 The first was Recommendation 34 – Data Simplification and Standardization for International Trade –
162 which recommends a simple, easy-to-use and cost-effective four-stage process to achieve the creation of
163 a nationally simplified and standardized dataset. The second was Recommendation 35 – Establishing a
164 Legal Framework for an International Trade Single Window – which provides advice and guidance in the
165 form a checklist of the common legal issues encountered when introducing a Single Window facility. Both
166 Recommendations are applicable to each of the different models of Single Windows described in
167 Recommendation 33.

168

169 Single Windows implementers, operators and end users have realized that enabling a single point of
170 data submission at the national level only partially meets the requirements of the entire
171 international supply and value chain. Despite the successful implementation of paperless   (or
172 significantly less paper) trading with a Single Window facility at the national level, many physical
173 documents for both business and Trade are generated to fulfil the requirements of trading partners,
174 counterparts and authorities across an international border. These requirements decrease the
175 effectiveness and efficiency of Single Window facilities.

176

177 To maximize the benefits of a National Single Window facility, coverage should be extended to
178 include cross-border electronic data exchange of all document-based information. Increasingly many
179 governments, supported by their business community, are demanding interoperability between
180 Single Window facilities, whether bilaterally or at the regional level. At the initiation of any
181 interoperability initiative, most emphasis is usually placed on the technical requirements needed to
182 transmit the data in a timely, accurate, and perhaps most importantly, secure manner. However,
183 interoperability is a process considerably more multifaceted.

184

185 Government, the trading community and other interested parties need a model of operation to
186 ensure coordination among the different authorities and agencies with their respective cultures,
187 objectives and agendas. Equally, the system must acknowledge the views and opinions of other
188 stakeholders to ensure it meets their business needs. This final point is important for software
189 developers and vendors that may produce the interface applications for interconnectivity and
190 interoperability.

191

192 This addition to the UN/CEFACT suite of Single Window products, Recommendation 36 – Single
193 Window Interoperability – provides guidance on the mechanism and systems required for the
194 interconnectivity and interoperability of two or more National (or Regional) Single Windows.   The

195 individual recommendations address the fundamentals needed for the exchange of information beyond
196 the domain of the National Single Window.
197

198   2.   Scope

199 The scope of this Recommendation covers the interoperability between two or more electronic
200 Single Window facilities in different countries or economies.
201

202 Consistent with the definition provided in UN/CEFACT Recommendation 33, the Single Windows
203 discussed in this Recommendation are those that facilitate import, export and transit-related
204 regulatory functions. The term "interoperability" in the context of this Recommendation is defined
205 as: the ability of two or more systems or components to exchange and use information across
206 borders without additional effort on the part of the trader.[1]
207

208 Although the majority of National Single Window facilities are related in some way to international
209 trade, there is distinction between the information and documents used within a country, and data
210 exchanged between the trading partner countries or economies. The Recommendation concentrates
211 on the information exchanged across borders and its reusability in, and interoperability with,
212 another Single Window facility.
213

214   3.   Objectives of this Recommendation

215 The purpose of this present Recommendation is to provide details of the preparations needed and the
216 models for information sharing before implementing bilateral and Regional Single Windows, and to
217 give examples of best practice.
218

219 The objective of the Recommendation is to highlight the issues, and to offer options for the
220 establishment of Single Window Interoperability, whether the national facility is operated by the
221 public or private sector. The aim of interoperability should be to exchange accurate complete data
222 (datasets) speedily, seamlessly and securely to the greatest benefit for operators and users. The
223 exchange of information could be bilateral, multilateral (sub-regional, regional) or international
224 through either a central hub, or a grid of interconnected facilities, or a network of networks such as
225 Value Added Networks.
226

227 The Recommendation does not aim to define the technical specifications or standards for Single
228 Window Interoperability. The models described in the Guidelines are for reference purposes and
229 planners, designers and implementers should build an interoperability module best suited to
230 identified government requirements and the commercial and trading needs of the business
231 community.
232

233 The target audience is predominately government, but the individual Recommendations, the Guidelines
234 and the identification of good practice are equally valid within the business community.
235

236   4.   Use of international standards and other guidance

237 UN/CEFACT recommends that planners, designers, implementers and operators of Single Windows
238 should use standards and technical specifications already developed by standards bodies at the
239 national, regional and international levels. Government should encourage and fully support this
240 approach.

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[1] Adapted from the definition of "interoperability" provided by the Institute of Electrical and Electronics
Engineers (IEEE) Standards Glossary available on: http://www.ieee.org

241

242   The development of bespoke solutions for operational or interoperability modules could result in
243   the failure of the National Single Window to connect and operate with comparable facilities in   other
244   trading partner countries and economies.

245

246   In the Guidelines to this Recommendation, a number of possible models are presented   and
247   explained in detail, including a dedicated interconnection between National Single Window facilities,
248   or a network of NSWs interconnected, or individual NSWs connected to a central secure hub The
249   Annexes of the Guidelines provide specific advice to support implementation of the   recommended
250   actions above, including determining SWI business needs, technical semantics[2] and the governance,
251   managerial and legal conditions needed to be in place in order to support SWI.

252

253   A repository of case studies for Single Window and other trade regulatory systems interoperability
254   will be developed, published and maintained. The case studies will provide more substance to issues
255   discussed in the Guidelines and identify where good practice has been employed.

256

257   **Recommendation**

258 Interoperability is made possible through the use of standards but also through a framework
259 that involves certain governance, policy and technical structures. Single Window planners, designers
260 and implementers, whether public or private sector, or in partnership should:

261

262   **a.** identify and analyze the primary drivers and needs for Single Window Interoperability, either
263 current or in the future, including perspectives from public and private sector stakeholders in Trade
264 to determine the type of Single Window Interoperability that will be necessary.

265

266   **b.** research and examine the type of business processes and information to be exchanged   between
267 the Single Window facilities, the existing semantic frameworks for this, and possible areas for
268 improvement.

269

270   **c.** consider the most appropriate model(s) for governance of the interoperability activity, at the
271 various stages of planning, implementation and ongoing operation in a way that is both financially
272 and administratively sustainable.

273

274   **d.** research all regional and bilateral trading agreements and arrangements to ensure specific
275 protocols or legally binding obligations are considered when developing a National (or Regional)
276 Single Window facility.

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[2] In the context of trade facilitation and the use of ICT in order to exchange data electronically between trading partners, semantics refers to the meaning of the information exchanged.

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PART TWO

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UN/CEFACT

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GUIDELINES ON SINGLE WINDOW INTEROPERABILITY

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Supporting Cross-Border Interoperability of Trade Regulatory Single Window Systems

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314 Issued as a complement to UN/CEFACT Recommendation No. 36 on Single Window Interoperability

1.   Introduction

These Guidelines are complementary to UN/CEFACT Recommendation Number 36 on Single Window Interoperability. The Guidelines are written for all entities, either public or private,   wishing to establish a Single Window system within national boundaries but interested in connecting this system across borders to one or several other opposite Single Window system(s). The purpose of this interconnection is to enable interoperability of cross-border electronic trading.

2.   Generalities and scope

Single Window Interoperability refers to the exchange of specified foreign trade-related information in a structured format between two or more Single Window systems in different economies. This exchanged information shall be reused and processed with minimum effort and modification for the purposes of international trade and related administrative services. This Recommendation refers to Single Windows that are regulatory in nature, and interoperability that is cross-border. These points are discussed in further detail below.

2.1.   Single Windows facilitate regulatory functions

The UN/CEFACT Recommendation 33 definition of Single Window stipulates: *"A Single Window is a facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfil all import, export, and transit-related regulatory requirements."* Therefore, other systems that offer single views to traders, such as Port Community Systems, but that do not deal with regulatory requirements, are not included in this Recommendation. That being said, there may be lessons to be learned from exploring models within these other systems that could be applicable in the context of regulatory Single Windows and these will be touched on within these Guidelines.

It is important to recognize that there are very few case studies of National Single Windows in the world today that allow trade and transport parties to fulfil all regulatory functions.   Rather, it is more common to see Single Windows that emphasize one aspect or area of trade regulation over another. A couple examples of these are:

The Customs-centric SW (CSW) model: The CSW is focused on customs formalities. It involves stakeholders dealing with cross-border movements of goods. In most countries, the Customs declaration has been completely dematerialized: EDI flows transmit the data directly from private databases (importer and exporter databases or cargo community systems) toward Customs clearance systems. Nevertheless, there are often up to 40 documents (certificates,   licenses, authorizations, notifications or any other documents issued by many competent authorities) which must be joined in hard copy to the Customs declarations in order to be checked by Customs. The results are reflected in the Customs treatment of the consignments. Border control measures aim at protecting citizens and consumers from unfair and illegal trade as well as ensuring their security and safety. Nevertheless, legitimate trade should not be unnecessarily hindered at the border. Balance between controls and trade facilitation must be observed. Automating the checks of supporting documents for Customs declarations by using IT systems and mechanisms like web services will simplify the task of Customs and accelerate the handling of the consignments for traders.

While many countries are successfully integrating other government agencies in their CSW, it should be noted that in most cases, CSW differs in practice from the conventional definition of a SW such as that used by UN/CEFACT in its Recommendation 33 of July 2005 in that many regulatory functions still happen outside the single entry point of the Single Window.

363 **The Transport-centric SW (TSW) model:** A transport-centric SW concerns movements of goods (and
364 persons) and their means of transport. In many cases, it is also linked to Port Community or
365 Authority Systems in the maritime, land, or air sectors. These systems provide an important view
366 for traders tracking the progress of their goods and port service providers, but in most cases also
367 provide a consolidation point for information that is necessary for regulatory purposes, for
368 example, commercial document (bill of lading, etc.) information required for managing inspections,
369 triggers for involvement of other government agencies, etc.

370 2.2. Interoperability is cross-border

371 As mentioned in the above section, in practice it is more common to see several systems
372 performing various regulatory processes, sometimes behind a single trader view, other times not.
373 It is due to this fact that the phenomenon of multiple "Single Windows" within one national boundary
374 may exist. The aim may be for these systems to converge behind one single trader view, in line with
375 the definition provided by Recommendation 33.   However, the purpose of this present
376 Recommendation and its Guidelines is not to explore how these national systems may interoperate,
377 but rather how Single Window systems within one country may interoperate with those of another.
378 Thus, the scope of these Guidelines is limited to cross-border interoperability. However, lessons may
379 be drawn from the more general but similar interoperability frameworks of non-regulatory Single
380 Windows noted in the above exclusion.
381
382 The overall focus of this present Recommendation is, therefore, on cross-border interoperability of
383 Single Window systems. It leaves interoperability issues between two or more Single Windows in the
384 same economy and jurisdiction to be resolved by national laws and solutions.
385
386 Cross-border interoperability means that a Single Window system in country A will achieve
387 interconnectivity with a Single Window in country B. Thus, data messages can be   exchanged
388 between two or more National Single Windows and effectively used by the authorities and   agencies
389 for the Single Window environment in each country. Moreover, this may include a transaction model
390 that permits company X to send electronic data communications or electronic records replicating
391 given trade documents in the same format to Single Windows in countries A and B by using the
392 Single Window in country A as a platform, as a repository for authentication, or other channeling
393 or support functions. Such transactions may be identified as Business to Government
394 (B2G) interoperability.

395 2.3. Interoperability in practice

396 Interoperability can either be between two countries or international regional economies. A variety
397 of different models for interoperability may be considered, but these can be divided for the large
398 part into two options:
399
400 **Centralized server model:** For example, States A, B and C all adhere to a Single Window ABC, the
401 server for which is located in country A. Each country participates in server maintenance and shares
402 costs. Most importantly, Single Window ABC will recognize and process electronic records received
403 through the joint Single Window. Data exchanges in this arrangement could include B2G and G2G
404 transactions.
405
406 **Gateway model:** Another type of Regional Single Window environment is one where the central
407 server manages a communications hub for each of the participating countries. The central server
408 does not retain or archive any trade or regulatory data. Only the transmitting and receiving National

409   Single Windows retain such data.[3]
410
411   In addition to the differences in design models, SWI can also be shaped by geographic and
412   sector coverage.
413
414   **Interoperability between national regulatory SW (bilateral interoperability):** Two
415   countries may mutually agree on interoperability on partial or complete interoperability of their
416   National Single Windows. Some examples include:
417   • South Korea and the Philippines
418   • The United State of America and Canada
419   • Omar and Malaysia
420
421   **Interoperability of multiple Single Windows within the same region (regional interoperability):**
422   Multiple countries within the same region may agree multilaterally either to create a Regional
423   Single Window with which each National Single Window will interoperate or to align fully all of
424   their National Single Windows to achieve full regional interoperability. Some examples include:
425   • ASEAN Single Window (ASW - government agreement, all types of information)
426   • African Alliance for Electronic Commerce (AAEC)
427
428   **Interoperability of multiple Single Windows across different regions (inter-regional**
429   **interoperability):** Multiple countries in different regions may agree multilaterally to create
430   either an inter-Regional Single Window with which each National (or Regional) Single Window will
431   interoperate, or to align fully all of their National (or Regional) Single Windows to achieve full
432   inter-regional interoperability. Some examples include:
433   • APEC (Asia Pacific Economic Cooperation)
434   • SELA (Sistema Económico Latinoamericano)
435
436   **Sectorial interoperability:** It is reminded that the scope of a Single Window, as defined within
437   UN/CEFACT Recommendation 33, allows parties involved in trade and transport to lodge standardized
438   information and documents with a single entry point to fulfil all import, export, and transit-related
439   regulatory requirements; however, for practical reasons, governments may prefer to concentrate
440   only on a specific sector when discussing interoperability with partner countries. Some examples
441   could include:
442   • Air-sector interoperability between countries eventually using a defined data model and
443   messages such as those defined by WCO and IATA
444   • Customs-only interoperability between countries using the data models and messages
445   defined in the World Customs Organization's Data Model
446   • Maritime-sector interoperability between countries (as can be reflected in the European
447   Union's e-Maritime Single Window project, or the MIELE project between Korean & Italy)
448
449

450   **3.   Relation to other Recommendations**
451   It is assumed that this Recommendation will be read and put into practice in conjunction with the
452   three earlier UN/CEFACT Recommendations 33, 34, and 35.
453
454   By emphasizing the use of international standards and of other transferable and translatable
455   structures, these Recommendations already set the stage for Single Window Interoperability   (SWI).
456   This is illustrated in the following direct extracts from the existing text:

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[3] See, e.g., Association of South East Asian Nations (ASEAN) Single Window at http://asw.asean.org/about-asw.

- **Recommendation 33:** "The use of standards and available tools will help ensure that the systems developed to implement the Single Window are more likely to be compatible with similar developments in other countries, and they could also help in the exchange of information between such Single Window facilities over time. In addition, the use of existing tools and best practices should help reduce the overall cost of implementation, as the project will be drawing on work already completed by other international standards organizations".

- **Recommendation 34:** "When undertaking the simplification and standardization exercise, Government should have a clear objective for the way in which the National Data Set will be used, whether to meet purely domestic trade needs or for incorporation into a national Single Window facility or utilization in any regional trade agreements, bilateral arrangements or other trade protocols".

- **Recommendation 35:** "Creating legally enabling conditions for an International Trade Single Window constitutes, therefore, one of the main challenges for countries and economies establishing such a national facility and/or seeking to exchange information with other Single Windows. For many governments, the list of legal issues will provide the basis for discovering other issues related not only to B2G and G2B transactions but also to the broader B2B environment nationally and internationally".

  Recommendation 35 also contains many indications related to the compliance of a national legal framework with international regulations or obligations.

There are many other resources available to practitioners, some of which are mentioned elsewhere in these Guidelines. UNECE has also published a paper in 2013 on the subject entitled "Trends for collaboration in international trade: Building a common Single Window Environment"[4] that is a useful reference paper for this effort.

4. Prerequisites for establishing Single Window Interoperability

For an effective and sustainable implementation of Single Window Interoperability projects, there are several important factors that need to be taken into consideration as described below:

4.1. Political will / identify driving force

Strong political will among decision makers and leading authorities is crucial when establishing a National Single Window solution, and even more so when establishing Single Window Interoperability between two or more economies. Often, political will can be reached through the clearly articulated needs of the business community, and practical examples of successful implementations and business cases. The governments' decision on SWI implementation should be formalized and materialized through the signing of bilateral or multilateral/regional Agreements. Such formality is important to gain the trust and confidence of the participating parties for successful SWI implementation.

The commitment and understanding of available benefits by decision makers will make it easier to identify the leading agency and driving force for Single Window Interoperability. A natural choice for this role is the ministry and/or agency responsible for National Single Window operation.

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[4] UNECE, *Trends for collaboration in international trade: Building a common Single Window Environment*, ECE/TRADE/411 (2013), available at, http://www.unece.org/index.php?id=33946.

503 The general acceptance of the idea and the operation will also help in
504 finding the necessary resources for preparation and implementation of SWI activities;
505 however, other challenges should also be brought, in an objective manner, to the decision
506 maker's awareness, so not to build the vision of just a plug-in interoperability,
507 especially in multilateral interoperability cases.

508   4.2.   Defined vision/scope for SWI

509 An important prerequisite for starting the SWI planning and establishment is a common
510 understanding of the aims and goals of SWI operation. Through common understanding,
511 it is possible to create and define a clear vision for the development and scope for SWI.
512
513 Defined scope of SWI activity is also important to focus the available resources towards the common
514 goal of the cooperating parties and economies. This also enables common definition of the semantics
515 and terms under discussion and in decision making.

516   4.3.   Desire and willingness on necessary levels to reach SWI

517 The political will among decision makers and high officers does not guarantee the
518 successful establishment and implementation of Single Window Interoperability. A positive
519 approach has to be enhanced at all necessary levels of operation.
520
521 After the planning and contractual phase between the participating economies has been finalized,
522 the practical work for SWI establishment is still to be done. Full commitment of the technical and
523 business process level of the implementing parties is of key importance. The effort and cost for
524 reaching this commitment is often very small compared to the barriers and inertia to overcome in
525 case it is neglected.

526   4.4.   Government/agency sponsorship confirmed and operational leadership identified and
527   recognized (by stakeholders)

528 Support by government is important when establishing the SWI activity. Desirable sponsorship
529 would be in the form of acceptance and support for the activity (political will) as well as
530 in the form of both financial and skills-based resources. Therefore, government sponsorship for
531 Single Window Interoperability should be secured and confirmed with all appropriate authorities.
532
533 Clear roles and responsibilities related to SWI should also be set for government stakeholders and
534 agencies in order to prevent any task from falling into a "grey area" between the interfaces,
535 hence blocking the development and implementation of SWI activities. On the other hand, the
536 roles and responsibilities should be clearly set to maintain the management team's support to the
537 implementation of the SWI, and to avoid confusion and misunderstandings during the process.
538
539 The SWI management team must also ensure and verify that all stakeholders understand the need
540 and aim of the SWI activity. A specific task and skill required for the management team is the ability
541 to engage all stakeholders in the project, and to keep them on board throughout the whole
542 process of establishment and implementation.

543   4.5.   Sustainable transaction volume

544 There is no need to consider the establishment of SWI in a case where trade transactions
545 between the respective economies are not sufficient to benefit from automated operations and
546 information sharing.

547

548 An easy way to ascertain this factor is to check whether trade statistics support the
549 establishment of SWI. However, in case the trade statistics do not support the establishment of
550 SWI, it is also worthwhile to look at trade volume prognoses if there are clear indications of
551 increasing foreign trade activity that support the establishment of SWI, especially between
552 respective economies.
553

554 If the key factor of the decision is based on anticipation, there should be some foreseeable, concrete
555 events or actions that influence trade volumes which can be estimated and calculated reliably.
556 This kind of event, for example, could be the establishment of a Free Trade Agreement.

557 **4.6.   Streamlined business processes**

558 Streamlined SWI business processes are essential to reduce double reporting of trade
information, increase productivity and facilitate growth. Faster and more effective processes help
559 authorities to respond rapidly to traders and improve collaboration between all parties for
560 better decision making.
561

563 The streamlined SWI processes should:
564 • reduce time to complete the trade regulatory procedures.
565 • reduce complexity of import/export processes.
566 • reduce bureaucracy and inefficiencies between Authorities.
567 • increase adaptability.

568 **4.7.   Consistent business processes**

569 Consistent and equivalent trade and administration procedures and processes in   economies
570 establishing Single Window Interoperability will greatly help in the practical implementation of
571 operations, and in negotiations on technical and other practical solutions as required. In practice,
572 this will be realized in terms of faster roll-out of the system and thus, cost savings for
573 governments and business.
574

575 Some examples of the areas where consistent business processes may help SWI are introduced
576 below.
577

578 Use of similar/corresponding standard trade documents and data sets in respective economies and
579 by their responsible agencies is an important facilitating factor. If the existing trade documents
580 and data sets are different, there is a need for harmonization activity; for example, following
581 UN/CEFACT Recommendation 34 (Data Simplification and Standardization for International Trade).
582

583 Utilization of standard electronic documents and/or messages between trade and NSWs
584 in respective countries will also be a very beneficial and facilitative factor. Furthermore,
585 implementation of standards-based message practices will be a valuable asset for interoperability
586 between National Single Window systems.
587

588 Single Window Interoperability will also greatly benefit from the implementation of corresponding
589 product classification and Customs tariff headings in participating countries.

590 **4.8.   Existence of National Single Window services**

591 A basic set of NSW services requires a sufficient number of companies using the NSW services with

592 a sustainable volume of trade to provide solid ground for enhancing the operation of SWI actions.
593 The existing trade and usage of a NSW also clearly shows where to find the possible partners for SWI
594 enhancement.
595
596 A clear understanding of the business needs for SWI, gained through NSW operation, is an important
597 prerequisite for the understanding of business aims and goals of SWI operation. Through this
598 understanding, it is possible to define and develop a business needs-based vision and services for
599 SWI.
600
601 An experienced NSW organization and its experts are the key resources in enhancing a national
602 operation for international implementation of SWI services. The experts thoroughly understand the
603 NSW system, data contents, interfaces and functionality. They will also have a very important role
604 when evaluating and identifying possible bottlenecks as well as developing the interoperability by
605 harmonizing the existing information, processes and practices for interoperability.
606

607 **5.   Limitations / constraints and challenges**

608 There are challenges and constraints foreseeable for business needs of SWI initiatives/projects such
609 as:
610

611 • **Evolving business processes:** Business processes are constantly changing to meet the
612   needs of various stakeholders. In addition, control measures by authorities are
613   evolving to better facilitate legitimate business transactions. SWI projects need
614   to be robust and flexible to cater to evolving business requirements.
615

616 • **Legal requirements:** Due to their national regulations, some Governments are obligated
617   to limit the exchange of sensitive business data to protect the interests of the business
618   community and its Government. As such, the level of detail to be exchanged between
619   SWI stakeholders is limited by such obligations. Appropriate laws and regulations
620   need to be enacted between participating countries and different authorities for the
621   collection, use, sharing and protection of information needed for effective and efficient
622   SWI implementation.
623

623 • **Disparity in the level of National Single Window implementation:** Because a NSW as an
624   important component in the SWI implementation project, the parties involved in the project
625   need to ensure the respective NSW will meet the business needs of the SWI stakeholders.
626

627 • **Funding/costs:** The sources of funding for SWI implementation and operation vary
628   according to the organizational/regional culture and nature of SWI implementation.
629   The magnitude and profile of the required funding over time should be defined in a
630   business case. Following are some examples of the funding strategy to be considered:
631   o   Direct funding from the participating Economies
632   o   Private Finance Initiative (PFI) by the beneficiary of the SWI stakeholders
633   o   Funding by donor organization
634   o   Fee based on SWI services where a viable business model to be deployed for the SWI
635   users to reimburse the development and ongoing operation of SWI
636   o   Mixture of above mentioned sources
637

638 **6.   Structure of the Guideline's annexes**

639 In order to facilitate the use of these Guidelines, considerations have been organized among three
640 topic areas, included as: Business Needs, Semantic Requirements, and Legal, Managerial, and

641   Administrative Aspects. These areas align with interoperability frameworks already in use (e.g. the
642   EU Interoperability Framework) and allow for guidance to be sought in accordance with areas of
643   specific interest to user groups, while all interrelate: "Why" and "How".

644   **Figure 1: Examples of Linkages between SWI Concept Areas**

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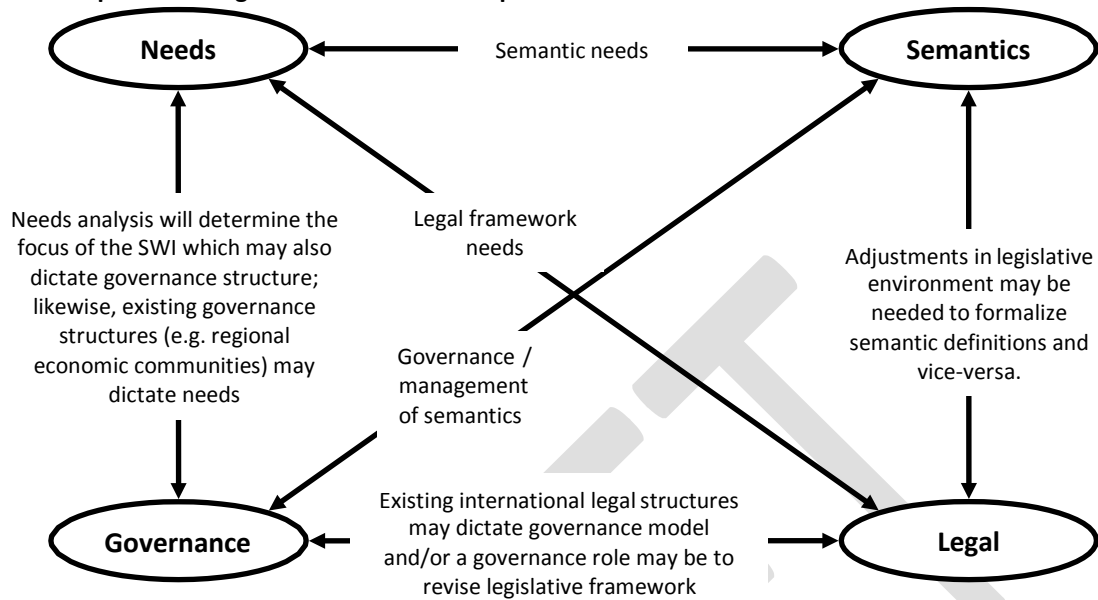
648   **GUIDELINES FOR DETERMINING BUSINESS NEEDS OF SINGLE WINDOW INTEROPERABILITY**

649

650   **1.   Introduction**

651   The aim of these specific Guidelines is to present examples of the multiple Business Needs for Single
652   Window Interoperability (SWI) and propose mechanisms and tools for identifying them. The term
653   "Business Needs" in this context is used to cover both trader and government requirements for Single
654   Window Interoperability. Consideration is also given to some basic requirements that need to be
655   fulfilled in order to justify the implementation of a SWI project.

656

657   The primary driver of Single Window Interoperability is facilitation for traders to conduct foreign
658   trade while assisting government agencies to take care of their own tasks. Trade-related information
659   exchange originates with the need of the seller and buyer to communicate with each other, as well
660   as with service providers, during the trade transaction, in order to complete the transaction process.
661   The same information can also be utilized by governments and agencies in different countries and
662   economies that need to exchange trade-related information, for example, the country of export and
663   the country of import, but possibly also other countries in transit.

664

665   In addition, effective Single Window Interoperability (including Regional Single Window
666   implementation) for cross-border information exchange) relies on trust between traders and
667   authorities for their readiness and willingness to share relevant trade-related information with
668   authorized parties.

669

670   Like business, government agencies also aim to fulfil their responsibilities efficiently and effectively,
671   while meeting their legal and operational requirements. In addition to accomplishing their tasks with
672   the least bureaucracy possible, as well as minimized cost of compliance to traders and
673   maximum transparency and predictability of official procedures.

674

675   **2.   Why Interoperability?**

676   In general, the business needs for cross-border trade-related information exchange in the context
677   of a National Single Windows include the following:

678

679   **Government to Government (G2G):** Facilitation of legitimate trade and the fight against fraud require
680   simple, rapid and standard trade/customs procedures and processes. The following are examples of
681   G2G information exchange that would expedite the risk analysis and process simplification for the
682   authorities:

683   •   Licenses, permits, certificates, etc.
684   •   Customs declaration information
685   •   Applications and decisions related to cross-border trade transactions

686

687   **Business to Government (B2G):** In the interests of business while fulfilling the necessary level
688   of control between Customs territories, the exchange of information between business and cross-
689   border government authorities is essential. Following are examples of B2G documents exchanged:

690   •   Advance cargo information
691   •   Conveyance information

692

693   The Single Window systems covered in this Recommendation and its Guidelines are aimed at
694   facilitating provision of regulatory trade information. As B2B data exchange for SWI projects i s

695 subject to negotiation/consensus between respective governments and traders, such data exchange
696 is outside the scope of this discussion.
697
698 In addition to the general reasons mentioned above, there can be multiple specific needs for
699 interoperability based on the agreements between the economies that are exchanging foreign trade-
700 related information. These should be clearly outlined in the agreements or protocols in order to
701 ensure clarity on the intended use of the information. Some of the reasons which may be outlined
702 include:
703
704 • **Trade facilitation:** Supporting traders in their declaration obligations in
705 countries with which they are not necessarily connected would allow
706 economic operators to comply with these countries' obligations and to compete in the
707 international market. One such example of this is listed above concerning advanced
708 electronic security declarations. However, this could be extended to other procedures up
709 to full import-related submissions. The European Union in its UCC is planning a possible
710 centralized clearance which would allow a trader in one member State to make
711 declarations in multiple member States through the Single Window platform of their own
712 country. The member States would then exchange the required data for the full import
713 declaration (or the requested economic procedure such as transit, inward processing
714 or warehousing). This is definitely a step towards trade facilitation and would help
715 economic operators to compete in multiple countries.
716
717 • **Risk analysis:** Receiving information related to the export declaration of the
718 merchandise in advance of its arrival would allow the government agencies of the
719 import country to asses any security, safety, fiscal or other risks. This aspect is outlined
720 within the WCO "SAFE Framework of Standards" in the first pillar on G2G
721 communication. It is also further developed in the WCO project on "Globally Networked
722 Customs" in which the import country will receive the export declaration-related
723 information from the exporting country in order to perform a comparative risk analysis.
724
725 • **Advance security declarations:** Building on this principle of risk analysis, many
726 countries have put in place an advance arrival security declaration system. This, again, is
727 outlined in the WCO "SAFE Framework of Standards" in the first pillar. Now that these
728 systems have been functioning for a few years, one of the major concerns is with the data
729 quality. The information which is being received is not reliable enough to perform a proper
730 risk analysis. Trying to get the information at the source, in the export country, would
731 allow improving the data quality. However, it would be difficult to oblige a foreign
732 exporter to file information directly into the import country's computer system. Single
733 Window Interoperability could assist with this through bilateral agreements between
734 countries where the export country's platform would capture all of the necessary data
735 elements; then the exporter would request that these data elements be sent to the
736 import country (through its own National Single Window platform); the export country's
737 Single Window platform would then transfer the information to the import country's
738 Single Window.
739
740 • **Preparation for border volumes:** At the very least, exchanging information about
741 volumes which are departing one country, and which will arrive in another country on
742 an approximate date, would allow the import country to try to adapt their
743 infrastructures accordingly, in order to accommodate the expected trade volumes.
744
745 • **Combatting illicit activity:** When identifying illicit merchandise, or suspected illicit

746   merchandise, at export, the export country could forewarn the import country in

747   order to ensure that the merchandise is properly inspected upon arrival. This could also be

748   extended to suspicions of fiscal evasion through trading transactions, and thus allow

749   countries to plan the proper inspection relative to such transactions.

750

751   3.   The benefits of Single Window Interoperability

752 Linked to the above reasons for SWI, an understanding of the potential benefits is also important.
753 Single Window facilities have a proven track record of delivering substantial benefits to both
754 government and the business community. Specific example can be found in both Recommendation
755 33 with its Guidelines and the Repository of Single Window Case Studies. Generally, the benefits
756 accrue at the national level, improving and enhancing the trading performance of a country up to
757 completion of the export process when the goods are ready for international transportation.

758

759 Government and business should not allow improvements generated by a Single Window facility to
760 cease at the national border. Benefits realized nationally could be extended to the international
761 movement of goods. Countries currently operating a National Single Window and those planning the
762 introduction of a similar facility should actively and positively consider the development of an
763 interoperability module as an integral part of the facility. The obvious advantage would be the ability
764 to communicate trade-related information easily and quickly, and more cost effectively for both
765 government and the trading community.

766

767 Other benefits flow from an interoperability module for a National Single Window and could include:

768   •   the transfer of master files between business partners, services providers and the
769   authorities avoiding the repeated need to submit or transmit the constant basic (header)
770   information of the relationships between trading partners.

771   •   developing and advancing the concept of the 'data pipeline' where information
772   would travel from origin to destination, and could be accessed by appropriately authorized
773   private and public sector parties to the specific trade transaction.

774   •   increased transparency and trade compliance with more timely and accurate trade-related
775   data delivered earlier in the international trade process for individual trade transactions.

776   •   supporting coordinated border management and application of risk management
777   in combatting fraud and illegal trade.

778   •   reuse of export data to populate transit declarations and import entry requirements,
779   thus reducing delays at the national and international borders.

780   •   opportunities to review and modernize the legal framework and create or amend existing
781   legislation covering the duties and obligations of parties involved in the international trade
782   transaction.

783   •   improved and enhanced trade agreements with interoperability as an integral part of the
784   protocols conferring preferential or non-preferential treatment.

785   •   harmonized trade data that reduce data redundancy and improve the consistency and
786   accuracy of data for the authorities at both export and import economies.

787   •   streamlined SWI business processes, reducing costs and administrative burdens.

788   •   support for regional integration and trade.

789   •   fostering economic growth.

790

791   4.   General business / sustainability analysis

792 A Business needs and sustainability analysis is important in order to understand
793 the real needs of the business community and government. To implement effective SWI, identify the
794 gaps and required development activities needed to reach sustainable SWI activity, as well as the
795 expected impact / benefits to be achieved by the implementation.

796
797 The aim of SWI (as is the aim of a Single Window itself) is to facilitate trade by making the regulatory
798 requirements as easy and as smooth as possible for businesses while at the same time meeting the
799 procedures and requirements set by authorities.
800
801 The task for the Business Needs and Sustainability Analysis is to find out:
802 • the need for facilitation within the SWI context (goal for SWI activity).
803 • what is already done (present/as-is situation).
804 • where to facilitate (identify the process gaps).
805 • how to facilitate (identify the procedures and best practices).
806 • when to facilitate (what should be done first).
807
808 The business needs analysis should not be stopped when the implementation of SWI is done, but
809 should continue with user and stakeholder feedback and evaluation of experiences when the
810 operation is up and running.
811
812 There are three sides to sustainability: Economic, Environmental and Social Sustainability.
813 Economic sustainability is a necessary and self-evident requirement for all business activities,
814 and easiest to measure. Environmental sustainability has become an increasingly important part of
815 business operations, including the efficient usage of energy and other resources for minimized
816 impact on the physical environment. Social sustainability aims for good business relations and
817 mutual benefit to all stakeholders.
818
819 Below are steps in carrying out the analysis to determine the necessary information and tasks to
820 start development of Single Window Interoperability:
821
822 a. **Identify key stakeholders:** Identify parties who will be affected by the
823 SWI implementation.
824
825 b. **Capture stakeholders' interests and requirements:** Conduct a study on each
826 stakeholder's business needs and requirements for SWI. The gathering of this information
827 could be achieved through workshops and/or working groups.
828
829 c. **Categorize the business needs and requirements:** The business needs and requirements
830 could be categorized as:
831 o Strategic
832 o Business
833 o Operational
834 o Technical
835
836 d. **Finalize the business needs and requirements for the SWI project:** Once the
837 business needs and requirements are gathered and categorized, determine which are
838 achievable and how they can be implemented by:
 o prioritizing the needs/requirements.
 o analyzing the impact.
 o resolving conflicting issues.
 o analyzing feasibility.
843
844 e. **Sign off:** The stakeholders or their representatives must sign off on the Business
845 Needs Analysis report/agreement to ensure that the SWI meets their business needs,

846   and that they are therefore committed to support the implementation of the SWI project.
847

5.   Analytical considerations

849   In conducting the needs analysis, the following analytical considerations may be made:

5.1.   Trade volume between economies involved

851 **Trade (Customs and transport) import and export statistics** are the traditional tool to analyze foreign
852   trade volumes on the country and trade sector level. The statistics are not a reactive tool and always
853 lag behind the latest changes in trade volumes, but in the longer run trade statistics provide reliable
854   information on foreign trade trends and developments. Trade statistics, however, do not provide
855   direct information on the frequency and number of individual trade transactions and, hence, provide
856   no specific information for the sustainability of Single Window Interoperability. Nonetheless, trade
857   statistics can be used for analyses of general trade volumes between countries, sectorial division of
858   traded goods and modes of transport utilized in export and import by product category.
859   Trade statistics might be available in different data sets and combinations in different countries. The
860   UN Statistics Division is standardizing the collection and publication of trade statistics, and
861   international trade statistics are compiled in The United Nations Commodity Trade Statistics
862   Database (UN Comtrade).
863

864 **Prognoses and surveys** on trade and economic situations and developments can be used for
865   evaluating future trade volumes in general, and between specific countries and
866   trade sectors. Combined with the study of trade statistics, these tools can provide reasonably good
867   estimates of trade volumes, present trends, and foreseeable developments to support
868   decision making and planning for SWI activities.
869

870   **Free Trade Agreements (FTA)** and other preferential arrangements normally boost trade between
871 economies. In addition to the main benefits of FTA, their influence on business activity might be
872 one of the triggers for arranging SWI implentation. A Free Trade Agreement combined with SWI
873 may create a powerful tool for predictable, stable and harmonized trade procedures
874 between participating economies.

5.2.   Strength of political will

876 **The level of commitment** among political decision makers and leading authorities is of major
877   importance when establishing Single Window Interoperability between two or more National Single
878   Windows. The level of commitment to the SWI development and operation can be ascertained
879   through interviews and discussions with appropriate political decision makers and lead authorities
880 such as Customs and trade Ministry officials, among others.
881

882 Often, political will can be reached through examining the needs of the business community
883 and examples of successful implementations and business cases. It is important that all relevant
884 stakeholders be interviewed and briefed about the benefits and possibilities of SWI.
885 However, other challenges should also be brought, in an objective manner, to the decision
886 makers' awareness, especially in multilateral interoperability cases.
887

888   **Awareness level on SWI benefits** among decision makers and leading Authorities as well as business
889   stakeholders is a key issue. The level of awareness can be raised with tools such as seminars,
890   interviews and discussions. Also, a questionnaire is a practical method to raise awareness on the topic
891 at the same time as the present level of awareness is studied. A questionnaire provides basic
892 information on the general attitude towards SWI. Attitudes and impressions may be checked with

893   discussions and interviews, e.g. while conducting studies for review and analysis.

5.3.   Level of "local" interoperability (national agencies to a NSW)

895   Business process analysis and modelling should be implemented among organizations related to
896   a NSW and its interoperability in order to discover possible bottlenecks and areas requiring
897   development, such as:
898   • analysis and modelling (or reviewing) of AS-IS situations of business processes and
899   data flows between (business and NSW and) NSW and government agencies and administration.
900   • analysis of SWI requirements and needs for processes and information flows.

5.4.   Internal review of national readiness for SWI

902   Interviews with business and other stakeholders should be conducted along with studies to review
903   the readiness for SWI activity. It is especially important this is conducted among NSW operational staff.
904
905   Motivation of stakeholders and NSW operational staff involves:
906   • ICT readiness: software, hardware and data communication.
907   • scheduling.

5.5.   Stakeholder needs

909   Review studies and interviews and analyze business stakeholder and other possible needs for SWI.
910   The reviewed areas could be, but are not limited to the following:
911   • Stakeholder analysis and evaluation of business needs
912   • Mutual user recognition mechanism: Trader identification; Trusted trader–schema.
913   Mutual recognition is needed for SWI, and SWs are encouraged to create a mechanism for
914   mutual recognition.
917   • Trade transaction identification
918   • A mechanism for trade transaction identification needed to track and trace trade
919   documents and connect the documentation to the goods (items)
920   • Use of appropriate classification system for product identification
921   • HS codes or other agreed product identification scheme
922
923   More stakeholder analyses are described in the section below.

5.6.   Bilateral trading agreements research

925   • There is need to research all regional and bilateral trading agreements and arrangements
926   to ensure specific protocols or legally binding obligations are considered when developing
927   a national Single Window facility.
928   • Such research may reveal examples where a trading agreement may need amendment or
929   revision.
930

5.7.   Cross-border and transit trade Information

932   We suggest the collection of cross-border and transit trade-related information requirements that
933   should be considered in the design of any interconnectivity and interoperability module for the
934   National Single Window.

5.8. Sustainable Single Window and international interoperability

- The participating authorities should conduct cost/benefit analysis and evaluation to assess the feasibility and benefits of SWI implementation in the long term.
- The participating authorities should also consider appropriate operational and business models for the implementation of SWI. The SWI operational and business models will be discussed in detail in the Governance Discussion Paper.

5.9. Environmental sustainability evaluation / analysis

Environmental sustainability analysis should also be a part of the analysis for SWI. It is anticipated that SWI will have similar environmental effects to most electronic business developments. At least, the use of paper and energy for producing and transporting documents will be reduced. One method of analysis that could be implemented here is, for example, Supply Chain Scorecard and Environmental Footprint analysis.

6. Analysis of parties' and stakeholders' business needs

It is crucial to analyze the roles and benefits of each of the parties involved in the SWI implementation. The scope and objective of the SWI project could be defined by analyzing the existing trade relationship and capacity between the participating countries and their readiness/preparedness for SWI. Below is an outline of the business needs of each stakeholder in relation to the cross-border trade facilitation business processes:

Governments (top/deciding level): Governments play a key role in establishing Single Window Interoperability. Government decisions pave the way for trade agreements and conventions resulting in increased trade volumes. Government decision or acceptance is required when starting to establish and implement information exchange between National Single Window systems of two countries or economies. Governments can also create a feasible environment for implementation of trade facilitation measures, allowing benefits like Single Window Interoperability to be realized. .

Lead agency (implementation level): A Single Window lead agency takes the responsibility of coordinating and implementing the SWI activity. The lead agency will also take action to negotiate on harmonization of practices and interfaces as well as necessary information such as data sets (documents), codes, etc. The lead agency may take care of the implementation action itself or nominate a **Single Window Service Provider** to take care at least of the technical implementation of Single Window Interoperability.

Traders/declarants (information source level): Without traders and the requirement to provide information on the traded goods along the supply chain for fiscal and other purposes, SWI activity will not be needed. The SWI activity is established to facilitate the traders' burden to provide information to administration.

Other interested parties involved in the business process:

- **Participating government agencies** could be involved in Business to Government (B2G) and Government to Government (G2G) relations. B2G is an interaction between a trader and administration. Different possible ways exist to enter the information: direct trader interface; EDI; web forms; etc. G2G relationships can have two facets: The 'external' case of G2G is when there is an interaction between two international administrations. The 'internal' case of G2G is when data exchange occurs internally in a

983   country between its local agency and related national governmental agencies.
984

985   •   **Chambers and others associations** are interested in developing ICT infrastructure for
986   facilitating global trade. Chambers of Commerce deliver international certificates; for
987   example, a certificate of origin may be needed to comply with Letters of Credit, foreign
988   Customs' requirements or a buyer's request. Electronic signatures are needed for SWI.
989

990   •   **IT service providers** can facilitate the process of SWI. They can offer IT services and
991   participate in developing, implementing or updating digital infrastructure or services for
992   private traders or administration. Interoperability will permit optimizing supply chain
993   management (tracking goods, knowledge in real time, anticipating events, etc.) If
994   generalized at an international level, this market can obtain economies of scale and lower
995   software prices. This can foster innovation.
996

997   •   **Financial institutions** facilitate the flow of money between a supplier and a buyer. There
998   are different types of payment to secure international sales transactions, such as a Letter
999   of Credit or Documentary Collection. Even if banks use SWIFT messages for issuing
1000   international trade payment, many documents (such as packing lists, insurance certificates,
1001   certificates of origin, commercial invoices, transport documents, EUR1, etc.) are still sent in
1002   paper form between the import and export banks. Single Window Interoperability could be
1003   an opportunity to dematerialize the payment process in parallel with the SWIFT platform.
1004

1005   •   **Port Operators** are obliged to report formalities concerning ships arriving in and departing
1006   from their countries. Two kinds of information systems are concerned for maritime
1007   transport: shipping and goods.
1008   o   *Shipping:* Vessels can be linked with port community systems which manage
1009   information at the port of call, e.g. dangerous goods information. Standardised
1010   forms for regulatory reporting are defined by the International Maritime
1011   Organisation (IMO) Convention on Facilitation of International Maritime Traffic
1012   (FAL). The different FAL paper forms are currently: IMO General Declaration; Cargo
1013   Declaration; Ship's Stores Declaration; Crew's Effects Declaration; Crew List;
1014   Passenger List; Dangerous Goods; In Europe, Directive 2010/65/UE [5] aims at
1015   simplifying and harmonizing the administrative procedures applied to maritime
1016   transport by establishing a standard for electronic transmission of information and
1017   by rationalizing the reporting formalities no later than June 1, 2015. In this Maritime
1018   Single Window project, each port sends data to a national system (in France named
1019   Traffic 2000) which transfers information to other agencies (e.g. Health Ministry,
1020   cross-border police, etc.) and to the European database, SafeSeaNet.
1021   o   *Goods:* Freight data can be integrated in a cargo community system which supports,
1022   in particular, e-Customs process.
1023

1024   •   **Ship owners** are interested in sending the information only once to National Single
1025   Windows (for example, some information of the FAL (shipping) are similar to goods
1026   clearance). This one-stop shop interface requires port operators to agree on data formats.
1027   For example, Customs goods classification is HS code whereas Dangerous Goods are
1028   classified with United Nation systems. Furthermore, statistics for maritime transportation
1029   of goods in France is based on another system named NST. Simplifying, rationalizing, and
1030   standardizing different nomenclatures, and agreeing on standards are key issues to
1031   prepare SWI. Ship owners require similar port Single Windows systems at an international
       level. For example Directive

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[5]   http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0065&from=FR

2010/65/UE will be implemented with 28 different project teams. Coordination is needed (in Europe ANNA[6] has this role). It means developing similar IT languages, standards and procedures.

- **Air cargo community** is composed of different stakeholders: airlines, airport authorities, ground handling agents, freight forwarders that currently exchange air cargo information via existing air cargo community systems. Government agencies and logistics actors would benefit from data exchange between the existing air cargo network/system and SWI. This would maximize the data reusability and accuracy readily available in the existing systems.

7.   Conclusions

It is crucial to perform the business needs analysis prior to development of Regional or National Single Window Interoperability projects as it will help the parties involved to understand the business goals and what is in place to support the implementation of SWI.

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[6] http://www.annamsw.eu/

SEMANTIC GUIDELINES FOR SINGLE WINDOW INTEROPERABILITY

1. Introduction and Definitions

These Guidelines refer to the semantic aspects of Single Window Interoperability (SWI): How can semantic interoperability be achieved?

For the basis of this Guidance, the following definitions are offered:

- **Semantics** is the study of meaning. In the context of trade facilitation and the use of ICT in order to exchange data electronically between trading partners, semantics refers to the meaning of the information exchanged – which must be identical. Semantic work confronts different ways of naming and describing things unambiguously. In an electronic data exchange, the result is the establishment of national harmonized or standardized data sets. Using these data sets, the trading partners assign the same meaning to the information exchanged.

- **Semantic interoperability** implies that the precise meaning of data exchanged electronically is preserved and well understood in an unambiguous manner, independent of the way in which it is physically represented or transmitted. Separating the model from the technology allows for alignment of business processes while still supporting variations in both business practices and information technology. This is fundamental to the concept of technology neutrality. Particular implementations, however, do require models to be expressed into technology-specific syntaxes and this can be achieved by using UN/CEFACT's technical specifications, such as UN/EDIFACT (ISO 9735) and UN/CEFACT's Naming and Design Rules for the Extensible Markup Language (XML).

- **SW semantic interoperability** is verified when two or more SWs perform mutually agreed business processes using predetermined electronic messages containing data whose meaning is identically interpreted by independent parties because they refer to a mutually agreed standardized dataset. These messages can be as simple as sending a document and receiving an acknowledgement, but may encompass more complete conversations (choreography of transactions).

- **Business processes** is the detailed description of the way participants intend to play their respective roles, establish business relations and share responsibilities to interact efficiently with the support of their respective information systems. Each business transaction is realized by an exchange of business documents (also called messages). The sequence in which these documents are used compose a particular instance of a scenario and are presented as use cases. Business processes can often be visualized with a flowchart as a sequence of activities with associated decision points, or with a process matrix as a sequence of activities with relevance rules based on data within the process.

2. Basic principles and levels of semantic interoperability

Interoperability is achieved at different layers: data-set creation methodology, data sets, business processes and messaging.

2.1.   Data set creation methodology

UN/CEFACT Core Component Technical Specification (CCTS) 2.01 is a methodology for developing a common set of semantic building blocks that represents the general types of business data in use today, and for the creation of new business vocabularies and restructuring of existing business vocabularies.

2.2.   Data set level

At a data level, interoperability of two or more countries' data sets is set out within the UN/CEFACT Recommendation 34. The ultimate goal is to define one standard set of data and messages to meet all governmental information requirements related to import, export and transit procedures. One of the objectives of data simplification is to eliminate redundancies and duplication in the submission of international trade and transport data to government authorities.

In the context of SWI, this data-level interoperability may address all import, export and transit procedures between the participating countries. Or it may only address a mutually agreed subset of these procedures. It could alternatively even be enlarged to include other sectors.

The alignment of two or more standardized data sets has important consequences in terms of safe supply chains and trade facilitation for enterprises, but does not necessarily mean that business processes and their corresponding electronic exchange of information are identical, and does not necessarily lead to cross-border exchanges.

It is preferable to base data harmonization on recognized international standards. This should allow inclusion of other participants at a later time, or interoperability with other systems not included within the scope of the SWI project. Depending on the standard organization's participation, such international standards will likely have been the result of key stakeholders in a number of domains and in a number of economies. This is the case of data standards and processes developed within UN/CEFACT, building on several decades of collaboration between countries and between the private and public sectors. Some of the results from this include:

- UNTDED is a joint UNECE and ISO standard with over a thousand data elements. It is referenced within ISO under the International Standard ISO 7372. The Maintenance Agency is composed of inter-governmental and non-governmental bodies.

- UN/CEFACT Core Component Library (CCL) is a library of business semantics in a data model which is harmonized, audited and published by UN/CEFACT. The CCL uses Core Component Technical Specifications (CCTS) to ensure consistency and interoperability. The library has contributions from many organizations including government and business, and deals with cross-border trade for messages for Buy – Ship – Pay business processes.

2.3.   Business process level

When two National SW systems want to exchange information, they need to have agreements concerning their common business processes. The modelling of these processes should be based on approved modelling techniques such as the UN/CEFACT Modelling Methodology, which is based on the Unified Modelling Language (UML).

As outlined in Recommendation 34, when analyzing the harmonization of the data sets, it will be necessary to consider the implications of each data-element's use within the context of the related process. Insofar as possible, the related processes should be aligned.

The alignment and harmonization process may result in an overwhelming mass of information. For this reason, the SWs which are seeking interoperability may wish to start by concentrating on certain aspects or domains which will be the initial subject of interoperability, then eventually roll out to other aspects or domains.

- UN/CEFACT Business Requirement Specification (BRS) is the mechanism for documenting user requirements and guiding the standards development process.

- Unified Modelling Language (UML) is a modelling language for design systems developed by the Object Management Group (OMG). It can include class diagrams, sequence diagrams, etc.

- UN/CEFACT Modelling Methodology (UMM) is a UML modelling approach to design the business services that each business partner must provide in order to collaborate. It provides the business justification for the service to be implemented in a service-oriented architecture

2.4. Message level (syntax)

Business processes are executed by the exchange of messages. The content of these messages needs to be agreed by both parties: sender and receiver. They are assembled using the above mentioned standardized data sets.

Interoperability at the level of XML Schemas implies the harmonization of naming rules and technical standards (of data models); class diagrams, class level, and attribute level should be extended with xml schemas.

- This XML Naming and Design Rules (NDR) specification is based on the World Wide Web consortium suite of XML specifications and the UN/CEFACT Core Components Technical Specification (CCTS). This specification defines XML Schema and Schema documents which are published and form the basis of UN/CEFACT standards publications. It has been developed to provide consistent and computer generated XML expressions of libraries created using CCTS specification. Therefore it takes a specific semantic data model and transforms it into its syntactic equivalent.

3. Issues and challenges

3.1. Achieving interoperability on a global level

One of the main challenges today is a lack of interest for interoperability outside of limited domain uses. There are, however, a number of international organizations which are working towards standards which contribute to interoperability on a global level.

ISO-IEC-ITU-UNECE Memorandum of Understanding

These four international standards organizations (International Organization for Standards – ISO; International Electronic Commission – IEC; International Telecommunication Union – ITU; and the United Nations Economic Commission for Europe – UNECE) have concluded an agreement which aims to coordinate the members' efforts on standardization and avoid duplication of work.

1180

1181 One recent joint project has been a proof-of-concept whose main goal is to develop semantic
1182 interoperability across consumers, industry and governments by reference to the following
1183 requirements :

1184 • Clear definition of concepts
1185 • Governance and operation of the vocabulary, in a web-enabled syntax neutral
1186   environment
1187 • The processes for discovering concepts and reusing them to foster interoperability
1188 • The process for defining and agreeing on extensions to the vocabulary
1189 • Support for multiple representations
1190 • Support for multiple languages
1191 • Implementation support tools, including mapping between native data in applications and
1192   the vocabulary
1193 • Use of tools such as Simple Knowledge Organization System (SKOS) and Resource
1194   Development Framework (RDF)
1195 • Deployment of the vocabulary – Publicly Available, Free of Charge

1196 **3.2.   Conformance versus compliance versus consistency with international standards**

1197 When the implementation of a given solution is defined solely with the terms and within the scope
1198 of a given standard, then it can be considered *compliant*. When the implementation of a given
1199 solution uses all of a given standard and builds upon that, it can be considered *conformant*.
1200 However, the extensions which were added may not be interoperable with other solutions since not
1201 included within the referenced standard.
1202

1203 When the implementation of a given solution uses only parts of a given standard and builds
1204 extensions upon that, it can be considered consistent. Again, the extensions which were added may
1205 not be interoperable with other solutions because not included within the referenced standard.
1206 What's more, as not the entire referenced standard is used, there is a chance that another party
1207 which used the same standard might not be able to align since parts will be missing from the
1208 "consistent" solution.

1209 **3.3.   Actors needing to comply with multiple Single Windows**

1210 In an international supply chain, it is possible that a single actor will need to comply with multiple
1211 Single Windows. This may be obvious for actors with operations in multiple countries, each with its
1212 own National Single Window. However, there can be cases within a national environment with
1213 multiple Single Windows each handling regulatory procedures.

1214 **3.4.   Different levels of experience**

1215 Single window implementers may have varying levels of experience making negotiations of
1216 interoperability a challenge. Some long standing implementers may have a very mature system and
1217 rich experience background which a country that has just begun its implementation will not have.
1218 Such an imbalance may make alignment a challenge as lesser experienced implementers may have
1219 requests which are based more on preconceptions rather than on actual experience and application
1220 of the principles set out in UN/CEFACT Recommendations 33, 34 and 35.

1221 **3.5.   The importance of context**

1222 The impact of sectorial and official contexts on SWI will be important and absolutely necessary.
1223 However, due to the existence of harmonized data models and standard libraries, it will be possible

1224 to establish semantic interoperability between SW systems in a relative sense without prejudicing
1225 the remaining differences between different contexts.
1226

An example of context in CCTS:

From CCTS 2.01 we have selected the following example which illustrates the notion of context and shows that electronic exchanges are not completely standardized precisely because they need to be adapted to the context in which they are used but are nevertheless calibrated by the reference to generic concepts:

- An invoicing Business Process uses a piece of information such as Invoice. VAT_ Tax. Amount.* Invoice. VAT_ Tax. Amount is a Basic Business Information Entity that is based on the Basic Core Component of Invoice. Tax. Amount.

- The invoicing Business Process is using Invoice. Tax. Amount in a specific business context where the Business Process Context = Purchasing, and the Geopolitical Context = EU.

- Therefore the application of context adds a specialized definition, but in all other respects the Basic Business Information Entity is the same as the associated Core Component of Invoice. Tax. Amount, i.e. it has the same structure and data type.

  * In accordance with rule [B17], VAT would be defined as Value Added Tax in the definition for the Basic Business Information Entity of Invoice. VAT_ Tax. Amount.

In CCTS 2.01 we find 395 occurrences of the string context.

1227
1228 The existence of different contexts in which developments occur results in the adaptation of a
1229 particular system to the different National or Regional SW systems with which it communicates.
1230 Participation in multiple SWI initiatives has been implemented by TradeXchange of Singapore which
1231 is a partner in SWI systems of PAA, ASW and participates in APEC regular SW interconnection
1232 workshops. TradeXchange adapts to all these environments but influences them.
1233
1234

GOVERNANCE OF SINGLE WINDOW INTEROPERABILITY

1.   Introduction to governance of Single Window Interoperability

Single Windows for external trade by their nature involve a large number of stakeholders: from the public regulatory agencies to private actors within the supply chain that will interact within the Single Window environment. Add a cross-border dimension and the number of stakeholders increases exponentially. Governing these systems within such a broad operating context and involving varied interest groups becomes a challenge for planners and implementers.

2.   Definition of governance

The term "governance" in itself is a broad term and is often used to denote power, e.g. who sets the agenda (mission, plan, structure) within a given context. Various State-centric definitions of governance exist. For example, the World Bank suggests that governance is "the process – by which authority is conferred on rulers, by which they make the rules, and by which those rules are enforced and modified."[7] The UNDP proposes that it involves "the exercise of economic, political and administrative authority [...]. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences".[8]

In business, "governance" can be described as: "The combination of processes and structures implemented by the board to inform, direct, manage, and monitor the activities of the organization toward the achievement of its objectives."[9] This offers a much wider application of the term, which we can adapt to understand that governance involves processes, decision-making, definition of actions, distribution of powers and accountability as well as performance management. From this interpretation of governance, various questions arise:

- •   What processes are used for making decisions?
- •   What actions are necessary?
- •   To whom are powers granted and how?
- •   How is performance verified or measured?

These questions are all applicable in the context of planning and implementing interoperable Single Windows for trade across borders. This paper will seek to explore these questions and identify possible models that can be used to govern SWI.

3.   Review of guidance on Single Window governance to date

The concept of Single Windows for trade is not a new one and various guidance has been developed over the ten years since the release of UN/CEFACT Recommendation No. 33 to support policy-makers and implementers of National Single Windows. A few of the key sources are detailed below:
The UN/CEFACT Recommendation No.33 Guidelines on Establishing a Single Window provides no specific advice with regards to Single Window governance, although ideas on governance may be

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[7] The World Bank, "Arriving at a Common Understanding of Governance":
http://go.worldbank.org/G2CHLXX0Q0
[8] United Nations Development Programme, "Governance for Sustainable Human Development",
UNDP Policy Document, New York, 1997.
[9] Institute of Internal Auditors (IIA) "International Standards for the Professional Practice of Internal Auditing: Glossary", https://na.theiia.org/standards-guidance/mandatory-guidance/Pages/Standards-Glossary.aspx

1277 extrapolated from the Single Authority basic model for Single Window in which one agency is given
1278 authority to execute selected tasks on behalf of other agencies. The Swedish Single Window is given
1279 as an example in this case as Swedish Customs performs tasks for the National Tax Administration,
1280 Statistics Sweden, Swedish Board of Agriculture, and National Board of Trade.
1281
1282 ***Figure 2: UN/CEFACT Recommendation 33's Single Authority Basic Single Window Model***
1283
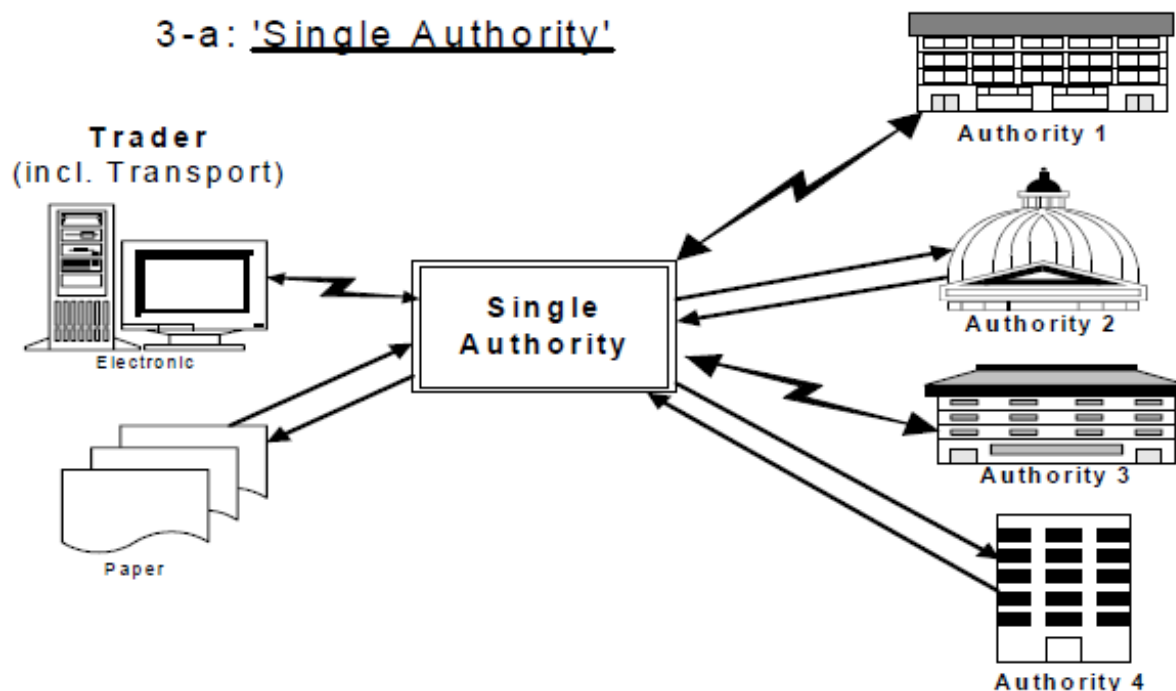
1284
1285 The Single Authority model, by its nature, implies some form of governance structure has been
1286 applied in order to provide the framework for one authority to act on the others' behalves. The
1287 alternative, automated models for Single Window provided in the Recommendation Guidelines do
1288 not necessarily carry the same implications for governance.
1289
1290 Beyond the Single Authority model, Recommendation 33 and its Guidelines provide a little more
1291 insight into governance options, introducing the idea of a Lead Agency for a Single Window but
1292 acknowledging that this will vary from country to country depending on legal, political and
1293 organizational issues, and may be public, private or some combination of the two (e.g. the public-
1294 private partnership in Mauritius). It also touches upon the varying role a Lead Agency might have in
1295 the Single Window, either simply as a coordinator (e.g. Netherlands), or a stronger operator, but
1296 does not go into further details.
1297
1298 Notably, the Recommendation 33 Guidelines identify several characteristics for the Lead Agency
1299 stating that it must have the necessary:
1300
1301 • vision.
1302 • authority (legal).
1303 • political backing.
1304 • financial and human resources.
1305 • interfaces to other key organizations.
1306
1307 Finally, it points out that Customs can be the agency best suited to lead a Single Window
1308 development and implementation, as was played out in the majority of the Single Window case
1309 studies reviewed for the Recommendation.

1310

1311 The World Customs Organization (WCO) took forward the idea of Customs having a lead role in the
1312 establishment of National Single Windows and provided further guidance in the form of the WCO
1313 Compendium on How to Build a Single Window Environment. This Compendium focuses on "a
1314 philosophy of governance" behind Single Window which contributes to the transformation of
1315 government structures in such a way that they better serve citizens' needs. The Compendium draws
1316 a link between Single Window and other concepts such as Coordinated Border Management (also
1317 known as Integrated Border Management) and inter-agency cooperation but does not provide more
1318 detail as to the governance structures that might be put into place to manage such cooperation
1319 beyond the assignation of [Customs as] a Lead Agency.

1320

1321 UN/ESCAP's Single Window Implementation Guide broke basic principles of governance into
1322 component parts including stakeholder collaboration, business and governance models of
1323 enforcement including finance, implementation and operation governance among its 10 key
1324 components of its Single Window Implementation Framework (SWIF).[10] This Guide provides a useful
1325 view of how cost-benefit analysis may be conducted to determine the most appropriate National
1326 Single Window model for implementation. Although not explicitly stated, this analytical work may
1327 also be applied to distinguish the best governance model for a given implementation.

1328

1329 Moving beyond guidance and recommendations specifically aimed at the development of National
1330 Single Windows, the recent UNECE paper "Trends for collaboration in international trade: Building a
1331 common Single Window Environment" offers some more detailed advice for governance of SWI
1332 introducing the concept of centralization versus federalization (or network) in terms of organization
1333 and governance of interoperability.

1334

1335 Other sources of information and related concepts that may be useful to acknowledge in the
1336 discussion on governance and SWI include:

1337

1338 • UN/CEFACT Recommendation 4 on National Trade Facilitation Bodies.
1339 • WCO guidance on Coordinated Border Management and Globally Networked Customs.
1340 • European Interoperability Framework and guidelines on Integrated Border Management.
1341 • public-private partnerships.
1342 • regional integration.

1343

1344 In addition to the above, case studies directly applicable to the SWI discussion include:

1345

1346 • ASEAN.
1347 • Korea (incl. Korea-China-Japan Maritime Platform).
1348 • EU (UNECE paper, EU Interoperability Framework & TRACES system, Maritime SW, ICS &
1349   NCTS, TIR).
1350 • African Alliance for e-Commerce.

1351

1352 **4.   Governance models**

1353 As shown, the guidance to date with respect to governance models for National Single Window
1354 implementation is fairly broad-based with little specific and direct relation to SWI. This discussion
1355 paper aims to extract lessons learned from conventional models and apply them in a new
1356 framework for SWI. In order to do this, it is necessary to revert to the original questions of

---

[10] The SWIF is based on "The Open Group Enterprise Architecture Framework", TOGAF, which includes
implementation governance as a key phase.

1357 governance, namely: (a) What processes are used for making decisions?; (b) What actions are
1358 necessary?; (c) To whom are powers granted and how?; and (d) How is performance verified or
1359 measured?
1360
1361 **Figure 3: four questions of governance**
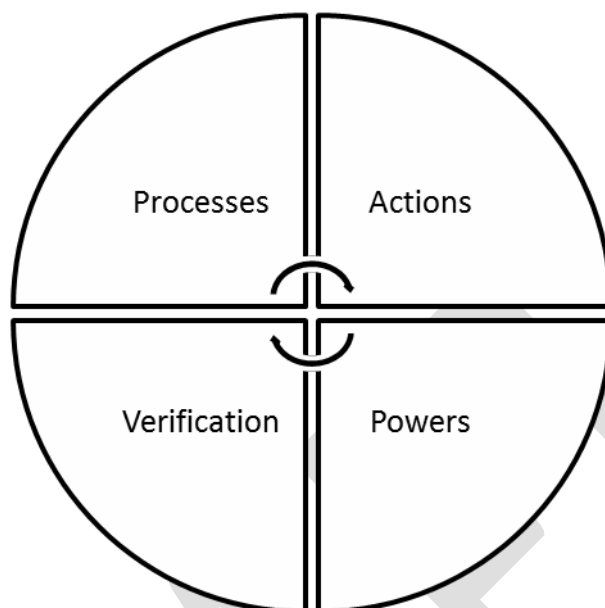
1362
1363 In order to apply these governance questions more usefully to SWI, it is helpful to look at SWI in
1364 three distinct phases of design, development and operation as each may require different forms of
1365 governance. But first, it is especially important to understand the overall global context in which
1366 SWI is taking place as this, too, will have an effect on forms of governance that may be required.

1367 **4.1.   Context of SWI governance models**

1368 The primary driver of SWI would be the globalization of trade and related supply chains. The
1369 increased flow of goods across borders and improved levels of communications create greater
1370 pressures on economies to be competitive and facilitate trade. Furthermore, there are increasing
1371 incentives for greater cross-border cooperation and enhancement of regional integration initiatives
1372 in order to reap benefits from economies of scale and access to markets.
1373
1374 Within the above framework, there are three key activities happening on a global level that will have
1375 an impact on the governance of interoperable Single Windows.
1376
1377 **First, the globalisation / convergence of trade facilitation initiatives:** This is perhaps most clearly
1378 illustrated in the World Trade Organization's (WTO) Trade Facilitation Agreement (TFA).[11] This
1379 Agreement identified Single Window and [Cross] Border Agency Cooperation as important tools for
1380 international trade facilitation (Articles 10.4 and 8.2 respectively). The TFA also contained several
1381 provisions for governance of these trade facilitation initiatives through the establishment of a
1382 Committee on Trade Facilitation as well as National Trade Facilitation Committees (Article 13).[12]
1383 These trade facilitation bodies may be considered viable governance models for interoperable Single

---

[11] At time of writing, while the TFA had failed to gain the formal approvals required to come into force, most of
the countries party to the agreement in December 2013 continue to pursue their commitments under it
(indeed, some 48 WTO Members have already made Category A commitments).
[12] see also UN/CEFACT Recommendation 4

1384 Windows.
1385
1386 **Second, the development and use of international trade standards:** Also contained within the WTO
1387 TFA (Article 10.3), the use of international standards for import, transit, and export formalities is not
1388 only an important trade facilitation tool but also central to the function of interoperability. Several
1389 key international standards for Single Windows are identified in Recommendation No. 33.
1390 Implementations that have followed such guidelines stand a greater chance of being interoperable.
1391 Other standards for interoperability are being considered in the parallel discussion paper on
1392 technical semantics for SWI. Ongoing developments of international trade standards that are of
1393 particular importance to the Interoperability (and governance) of Single Windows are:
1394
1395 • trader identification.
1396 • Unique Consignment Reference (UCR) / transaction identification.
1397 • product identification.
1398
1399 **Third, overlaying regional integration structures:** Single Window, in its original form, was a tool to
1400 enhance a country's national trade facilitation position. Interoperable, cross-border and Regional
1401 Single Windows can now be seen in their broader context as tools not only to improve national
1402 competitiveness but also to promote regional economic growth. There are many drivers for regional
1403 integration (security, social and economic) and regional integration initiatives have been increasing
1404 across all continents over the past decade. Regional Economic Communities (RECs) take many
1405 different forms and often overlap but their shape will certainly also have a significant impact on the
1406 governance of SWI within the region.
1407
1408 The Association for Southeast Asian Nations (ASEAN) offers a strong case study for the impact of a
1409 Regional Economic Community on the formation of a Regional Single Window system. Through such
1410 a case study we may see how the governance structures of the larger REC may impact the
1411 governance of a Regional Single Window. Similarly, reflections may be drawn in highly integrated
1412 environments such as the EU as well as deep bilateral relationships such as between the US and
1413 Canada. The highly integrated systems of these latter examples attest to that fact.
1414
1415 Globalization, international standards, and regional integration structures not only impact the
1416 governance models for SWI but also the business drivers, or needs, as well as the technical and legal
1417 framework in which Single Windows work. For this reason, these issues are also discussed in the
1418 other papers alongside this one.
1419

1420 **5.   Governance models for the initial design stage of SWI**

1421 During the early stages of Single Window design, it is most likely that existing governance structures
1422 will be utilized to initiate the SWI activities. In particular, the processes for decision making and
1423 power structures already in place may be utilized to govern the commencing activities and functions
1424 gearing towards SWI.
1425
1426 In a cross-border setting, these existing governance structures will be in the form of bilateral or
1427 multilateral agreements and will be closely linked with the level of [regional] integration between
1428 the parties as set by these agreements. These may be deeply evolved state-level treaties defining
1429 detailed decision-making processes and conferring powers at a supranational level (such as
1430 governed by the European Parliament and related legal institutions). They may be detailed inter-
1431 governmental agreements such as between the US and Canada; or more general cross-border
1432 agreements such as the Greater Mekong Subregion Cross-Border Transport Facilitation Agreement
1433 (CBTFA); or institutional-level Memoranda of Understanding (MoU) such as those that might be

1434 agreed upon by Customs authorities across a border. Each level of agreement will come with
1435 different legal implications for SWI, as considered in the parallel discussion paper on legal issues.
1436

Centralized versus network governance models

The existing cross-border governance structures and legal environments may differ, but in order for SWI to take shape, a set of characteristics are required that are much the same for a lead organization to take forward in any Single Window development, namely: vision, authority, political will, financial and human resources, and access to key stakeholders.[13] This may be achieved through a strong centralized model where an authority with supranational powers exists, but given global experience, in a cross-border context it is more likely that a decentralized, network governance model would be more applicable. A network governance model would be more likely to have the ability to reach the wider number and more diverse set of actors across increasingly complex international supply chains.

Characteristics of a network governance model:

- Involve a large number of interdependent actors who interact in order to produce common purpose.
- Based on negotiation
- Compliance is ensured through trust and political obligation which, over time, becomes sustained by self-constituted rules and norms.[14]

Benefits of network governance:

- Greater access to stakeholders (a network of networks).
- Improvements based on knowledge sharing
- More effective, collective problem-solving.

Looking beyond the State-level, a governance model for SWI could be developed from a network of Customs agencies (e.g. the WCO's Globally Networked Customs), or perhaps in future, a network of National Trade Facilitation Committees (as foreseen by the WTO FTA).

1437
1438 Regardless of whether or not it takes on a centralized or decentralized shape, the starting point for
1439 any governance model is identification of a common need. For the initial stages of SWI design, any
1440 governance structure will be focused on the following activities to articulate the common need or
1441 "vision" [in accordance with international best practice]:
1442
1443 • Defining technical structures (see technical discussion paper in this series)
1444 • Defining legal framework (see legal discussion paper in this series)
1445 • Identifying operational requirements (see business needs paper in this series)
1446 • Cost-benefit analysis of all of the above
1447
1448 In tandem with this, the governance model at the initial design stage will also be focused on:
1449
1450 • assigning powers and accountability (that relate to the decision-making process needed to
1451   achieve the above actions).
1452 • setting benchmarks (linked to the above).
1453 • refining decision-making processes for interoperable Single Windows.

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[13] It is possible that National Trade Facilitation Committees foreseen by the WTO TFA would be a natural place to start.

[14] Nielsen, K. & Pedersen, O. K. 1988. 'The Negotiated Economy: Ideal and History', Scandinavian Political Studies, 11(2): 79–101.

1454
1455 These powers may be assigned to groups (e.g. technical working groups), either inside or outside the
1456 organization or network through contracts or other legal mechanisms to be discussed separately. At
1457 this stage, the focus would be on identifying and assigning powers, processes and means of
1458 verification as actions. The specific powers and decision-making processes needed to do this would
1459 be derived from the existing governance structures.
1460
1461 **Figure 4: focus of governance during the initial stages of designing SWI**
1462
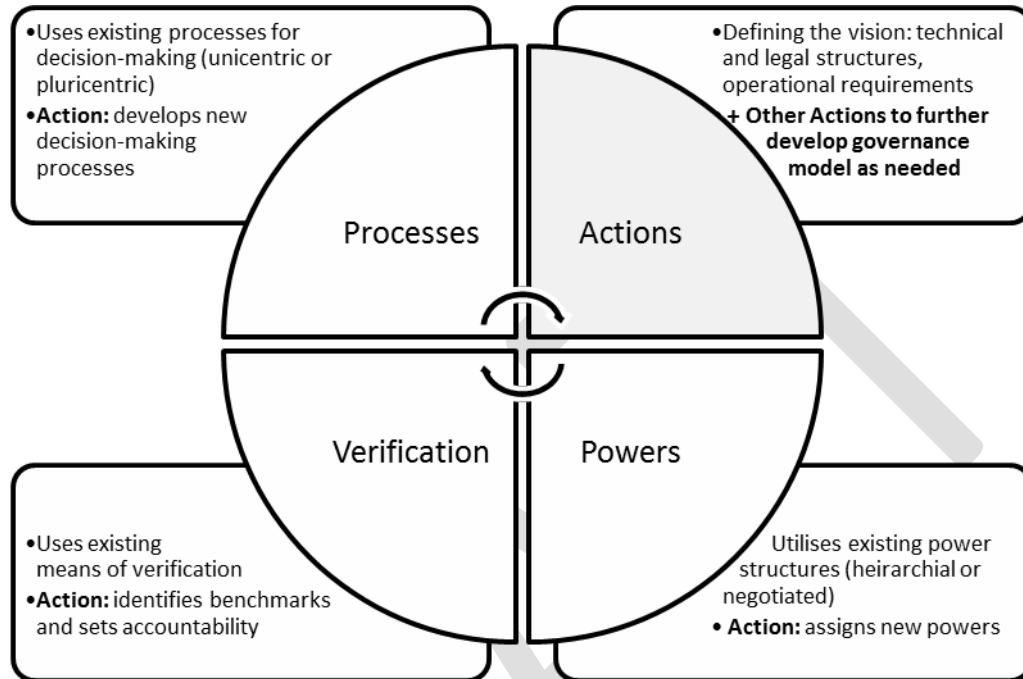
1463
1464

1465 ## 6.   Governance models for the development of SWI

1466 Once the technical shape, legal frameworks, and operational requirements have been defined
1467 during the design stage, the governance structure will need to be adjusted in order to take on more
1468 specific actions or functions related to the development of interoperable Single Windows. These
1469 actions may include and are not limited to:
1470 • procurement of resources (financial and human, internal and external).
1471 • development of software.
1472 • installation of infrastructure.
1473 • business process re-engineering; and pilot testing.
1474
1475 These activities form part of any Single Window development, regardless of whether or not they are
1476 going to interoperate across borders. They may therefore be governed by national (or
1477 organizational) structures.
1478
1479 There are, however, several activities that may be needed specifically for the development of
1480 interoperable Single Windows that will require cross-border governance, namely:
1481 • Cross-border process harmonisation / alignment
1482 • Development of new standards to be used within the Single Window system (as needed, if
1483 international standards do not apply or need adapting, e.g. common tariff nomenclature,
1484 trader identification, etc.)
1485 • Pooled human and financial resources for the development of core services and   common

1486	utilities (software or infrastructure, e.g. centralized software / gateways / information
1487	management, etc.)
1488	• Public-private consultations, including help to prioritize data to be exchanged between
1489	multiple countries/Single Windows.
1490	
1491	The existing governance systems in place for the design phase may not be sufficient (in terms of
1492	power or decision-making process); therefore, adjustments to governance structure may be
1493	implemented (in accordance with the original designs / visions) as needed, and/or new governance
1494	institutions may need to be created.
1495	

Project governance models to manage development

An important point to note is that the development stage of SWI has a defined end, that is: when Single Windows are interoperable in line with the agreed common vision. Therefore, it may be helpful for the development phase of SWI to be considered as a "project".[15] Project governance models are always <u>temporary</u> and offer a very specific advantage in situations where existing organizational structures are not sufficient to manage the activities required to achieve the project's outcome.
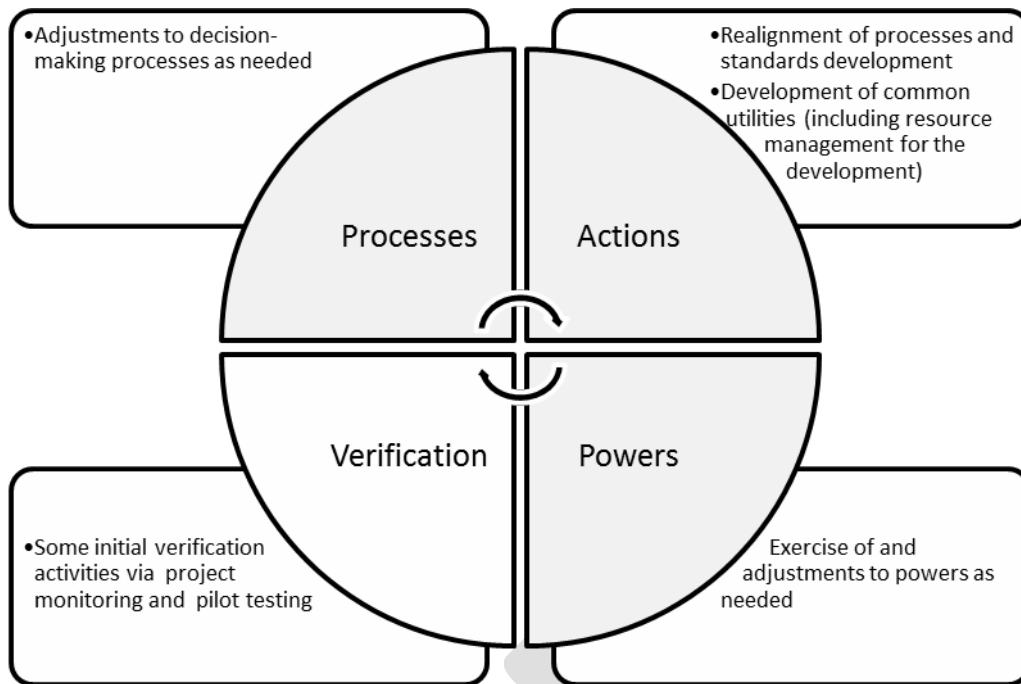
Best practice in Project Management envisages a hierarchical structure to manage the execution of the project tasks under the control of a Project Director and/or Manager, but the governance structure above that is more inclusive in the form of a Project Board (or Steering Committee). The wider network governance structure outlined as a possibility in the initial design of SWI may be suitably transitioned into the Project Steering Committee or Board.

One of the challenges posed by installing a project governance structure for the development of SWI is the fact that it requires temporary and specific resource allocation. This challenge is often overcome by outsourcing as is seen in most cases where the development of Single Windows is outsourced to private sector entities.

1496	
1497	Whether or not project governance or other models of governance are used during the
1498	development of interoperable Single Windows, it is clear that the demands on governance functions
1499	are more significant and more specific during the development phase than in the design phase. With
1500	proper awareness of this fact, appropriate plans are made during the design phase to make the
1501	necessary adjustments to the governance framework.
1502	
1503	**Figure 5: focus of governance during the development of SWI**
1504	

---

[15] The Project Management Institute defines a Project as "A <u>temporary</u> endeavour undertaken to create a unique product, service, or result." *A Guide to the Project Management Body of Knowledge*, Fourth Ed. (Glossary).

Processes — •Adjustments to decision-making processes as needed

Actions — •Realignment of processes and standards development •Development of common utilities (including resource management for the development)

Verification — •Some initial verification activities via project monitoring and pilot testing

Powers — Exercise of and adjustments to powers as needed

7.   Governance models for operation of interoperable SWs

Once two Single Windows are interoperable with each other, the focus of the form of governance should shift to sustainability. If a project governance structure or something temporary was put into place during the development, then it should be replaced or evolved into something that will last indefinitely.   Key functions will include:

- sustainability.
- continued access to resources.
- core services management.

The options for ongoing operational management of the interoperable Single Windows will depend once again on the existing level of cross-border integration as either a centralized or networked governance model which could be applied in the ongoing operation of interoperable Single Windows. In addition to the consideration of the cross-border governance context, the form of governance that was used during the development stage may also be considered as a factor in determining the final model of governance chosen for SWI.
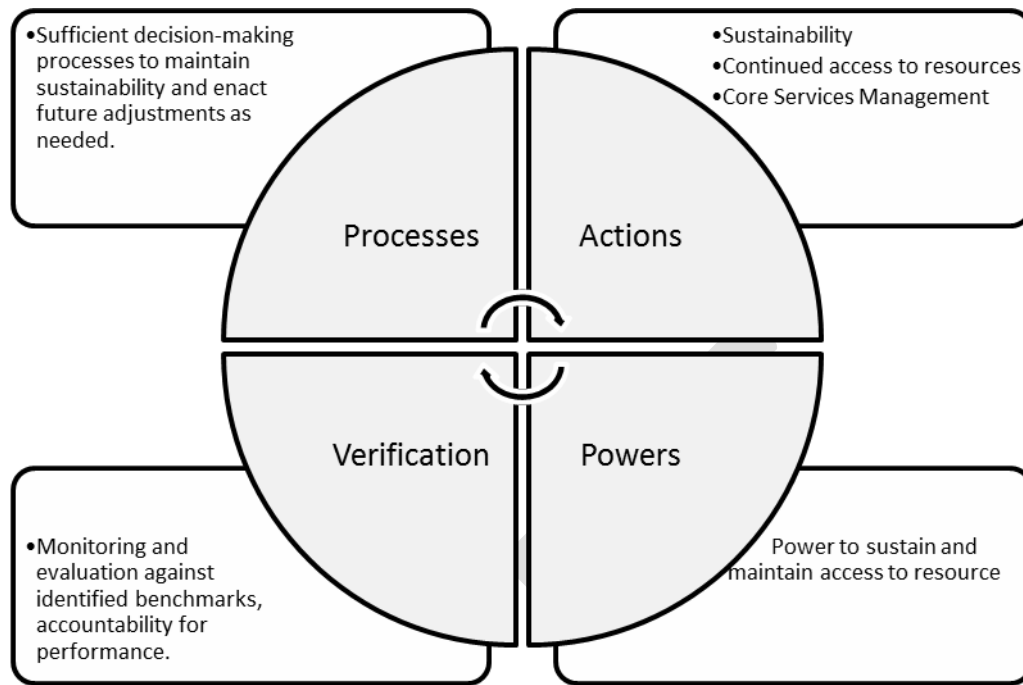
If, during the development phase, (a) a strong centralized governance structure was created, either temporarily as part of a project governance approach, or otherwise; and (b) this structure was found to be self-sustaining either by design or adaptation, then it would be possible for a networked governance approach to be used during the design phase and a centralized governance form employed during the operational stage.

Public-private-partnerships are models that are frequently employed between public and private sectors to engage a strong project-management approach in the development of a system and sustain it through to SWI operation; however, these come with a number of challenges and considerations for all parties involved. Even if strong central control provides for good immediate access to resources and core services management, this may be hindered in the long run due to the fact that multiple stakeholders need to continue to be involved in order to ensure key data are kept up-to-date and overall sustainability is achieved. A hybrid network governance approach may be necessary.

1537
1538 **Figure 6: focus of governance during SWI operation**
1539

- Sufficient decision-making processes to maintain sustainability and enact future adjustments as needed.

- Sustainability
- Continued access to resources
- Core Services Management

Processes

Actions

Verification

Powers

- Monitoring and evaluation against identified benchmarks, accountability for performance.

Power to sustain and maintain access to resource

1540
1541

8. Conclusions

1542
1543 The governance framework for SWI is complex, driven by a wider context involving globalization of
1544 trade, internationalization of standards, and regional integration. Each governance approach to SWI
1545 will need to be adapted to suit the specific environment in which the parties will operate across
1546 borders. That being said, there is merit in exploring the idea that certain forms of governance may
1547 be more useful at some stages over another. For instance, network governance models may be
1548 particularly applicable during the design of SWI, whereas project governance models might be more
1549 appropriate for the development. Further case studies may help shed light on these aspects.
1550

LEGAL ASPECTS OF SINGLE WINDOW INTEROPERABILITY

1.   Introduction and background

The Single Window Interoperability (SWI) project focuses on the mechanisms required for the interconnectivity of two or more Single Window facilities located in different countries. This section of the Recommendation concentrates on the legal environment required for the effective implementation of Single Window Interoperability. It aims at answering the questions of what administrative and legal conditions need to be in place in order to support and facilitate interconnectivity and interoperability of Single Window systems across borders. While Recommendation No. 33 looked at both electronic and paper-based processes, the current project looks only at electronic exchange of information.

Parties involved need to have a model of working through proposed legislation that coordinates the different agencies, departments and their respective agendas and cultures and takes into account the opinions of other stakeholders, such as Trade itself, to ensure it meets their business requirements. The model for SWI is addressed to governments, international organizations, and private sector stakeholders including legislators, regulators, facilitators and operators of Single Window systems.

2.   Regulatory issues

The legal environment issues addressed in this Guidance focus primarily on regulatory issues generally in the context of Governments exercising trade controls. For example, company X is submitting a Customs declaration including particular documents such as the certificate of origin, veterinary or phytosanitary certificates, and applications for import licences and permits. The variety of legal issues related to this type of exchange are considered here in terms of the overall legal framework necessary for Single Window Interoperability.

This approach does not address contracting issues (B2B transactions) or contracting issues that may be related to the establishment and operation of the Single Window facility. Generally, companies can enter into contractual relationships through trade platforms or otherwise by electronic means.[16] It is, however, not common to conclude contracts through Single Window systems. Using Single Windows is part of the performance of a trade contract by the parties to such trade contracts, as well as contract performance by their agents, e.g. freight forwarders.

3.   Scope of legal environment component of the Recommendation

3.1.   Government to government interoperability

The legal environment issues in this Recommendation focus on issues relating to Government to Government (G2G) interoperability of National Single Window frameworks, including issues that arise in connection with the implementation and operation of such interoperable systems. It will not address Business to Government (B2G) interoperability requirements unless these are closely connected to Government to Government interoperability. It will also not address issues involving Business to Business (B2B) relationships between the various parties involved in international trade

---

[16] As noted above, this Recommendation focuses on the use of electronic Single Window systems rather than paper models. Therefore, it assumes that an electronic transactions legal framework has been established for B2B, B2G, etc. transactions in each of the participating countries. *See*, Recommendation 35 (2010).

1594 transactions, or relationships between such businesses and governments, such as filing
1595 requirements.

1596 **3.2.   Relationship with Recommendation No. 35**

1597 UN/CEFACT issued Recommendation No. 35 – Establishing a Legal Framework for International
1598 Trade Single Window[17] to provide general guidance on the legal framework issues related to
1599 developing, implementing and operating Single Window facilities. Recommendation 35 suggests the
1600 importance of considering international trade transaction legal issues. Its Annex II provides criteria
1601 to consider and these criteria should be observed whenever establishing a Single Window system.
1602 This present Recommendation on Single Window Interoperability builds on the foundation provided
1603 in Recommendation 35 and adds to its provisions only where necessary. Reference may be made to
1604 other legal instruments relevant to the setting up and running of Single Window facilities.
1605 *Recommendation 35* also notes the importance of adopting international standards when
1606 establishing the legal environment for a Single Window.[18]

1607 **4.   Legal issues Involved in cross-border Single Window Interoperability**

1608 **4.1.   General introduction**

1609 The following list of issues and principles are largely based on Recommendation 35. They are
1610 intended primarily to highlight those questions that may arise in a cross-border interoperability
1611 context. Recommendation 35 should be referenced when reviewing the following material. It
1612 should be noted that owing to the extremely robust range of legal issues that might need to be
1613 addressed in varying Single Window circumstances and different legal regimes, the list is not
1614 exhaustive.

1615
1616 Single Window Interoperability for regulatory purposes means that the authorities of different
1617 countries cooperate by [electronically] exchanging data to meet regulatory aims. The data may have
1618 a different structure, content and legal status in different countries. Even regulatory data based on
1619 the same legal source such as an international convention or EU directive may end up being
1620 different when implemented. Only full harmonization of law could eradicate such problems.

1621 **4.2.   The main principles of Single Window Interoperability**

1622 International law of cooperation between States in the field of electronic exchange of regulatory
1623 data is not very developed. Few treaties exist and these may be sectorial or territorial only. We may
1624 therefore look for principles that could be crystallized into customary international law or, possibly
1625 later on, into treaty provisions of a more general application.

1626
1627 For example, in the Eurasian Economic Union, there are a number of key principles applicable to the
1628 information exchanges between Single Window systems and these set an example of issues that
1629 should be addressed and defined in any agreement between two or more National Single Window
1630 operations participating in such exchanges. The electronic exchange of information and data
1631 messages, and the further use of this information in each participating State, should be based on at
1632 least the following principles:

1633

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[17] Recommendation 35 is available at http://tfig.unece.org/contents/recommendation-35.htm. (December 2010.)

[18] See, Recommendation 35, Annex III – Toolkit (listing a variety of international organizations providing guidance on legal and other issues relevant to Single Window development

- **Mutual interest and benefit of the parties (participating in the exchange of information):** This principle means that the parties agree on the provision of information on a parity basis. The scope and conditions of the information provided should meet the interests of the parties. Information exchange should enhance the development of cooperation between the parties.

- **Accessibility and availability of data:** The requests for information should be processed and replied to the requesting party to the extent specified in the agreement between the States parties.

- **Accuracy and completeness of information:** Information provided to the requesting party must be accurate and contain a complete list of information as defined in their agreement.

- **Timely submission of required information:** Parties should adhere to deadlines for providing the information fixed in an agreement. Delays in reporting should be avoided.

- **The information exchanged should be used only for limited specified purposes**: Parties should take into account the needs of confidentiality and without prejudice to the State that has provided such information.

  Harmonization is needed as regards the limitations to share information between governmental agencies of different States which may have different laws on data sharing. Data sharing should be only in the interests of the data provider, normally a legal person submitting data in a B2G relationship. The use of the information is allowed only for the purposes for which it was sent by the data provider. The receiving Single Window would ordinarily not be permitted to share this information, without the express permission of the party submitting it, with third parties except, of course, with other government agencies that are participating in the Single Window and are involved in a decision-making process related to the transaction (e.g. issuing permits, clearance of goods, etc.)

  In some countries, the exchange of trade and/or Customs information with another Single Window may require the permission of the trader submitting such information. In this situation, it may be important to incorporate provisions to permit this in an end-user agreement for traders who submit trade data to the Single Window. In the absence of a permission, the transfer is would normally not be possible. Only a compelling reason of public interest could make an exception, e.g. if the transfer is necessary to save life or property values.

- **Exchange of information is based on international standards and recommendations:** For the purposes of information exchange and interoperability of information systems, the parties should use existing international standards and recommendations as incorporated into their agreement(s) for the exchange of data.

- **Exchange of information is conducted on a non-profit basis:** The information exchange should ideally be organized to take place on a free of fees or charges basis, especially in the G2G context. Where fees are charged, they should be cost-based and non-profit. However, this should not prevent the parties from concluding in an agreement to exchange trade data to adopt a fee schedule. This is also without prejudice to the financing model of the

1683   Single Window and the public services in general.

4.3.   The legal basis for establishing cross-border interoperability

1685 This matter is most closely connected with and based on public international law. Countries A and B
1686 may become legally obliged to create interoperability. Treaties and conventions create legal
1687 obligations on States. At the same time, and as noted in Recommendation 35, the national law that
1688 enables a country's Single Window should authorize the cross-border exchange of trade data and
1689 information.

1691 In the absence of a binding treaty or convention, States may nevertheless undertake to cooperate
1692 with other States by assent on the basis of reciprocity and mutual recognition. This may include
1693 mutual recognition of Single Window systems. This may require considerable effort unless the
1694 administrative and technical systems are already quite similar. However, it is likely that some type of
1695 bilateral or multilateral agreement may be needed between the two or more States involved in
1696 establishing cross-border interoperability.

1698 Legal obligations are most effectively created to cut administrative red tape and to harmonize
1699 administrative requirements such as the number and nature of administrative documents needed to
1700 fulfil the regulatory procedures conducted through the Single Windows. It is also possible to create
1701 technical interoperability requirements through legislation, but it is usually preferable to maintain
1702 technology neutrality in national legislation. It is suggested that technical (in the pure sense of the
1703 word) interoperability be established and maintained through negotiations.

4.4.   Appropriate organizational structure

1705 Establishing the organizational structure for the National Single Window (i.e. its legal structure and
1706 governance) is normally a matter of domestic law. National law determines to what extent
1707 contractual approaches are possible and whether self-assessment by end users of their obligations
1708 *vis-à-vis* the authorities and the Single Window systems is possible. And provided that the cross-
1709 border exchange of data is authorized in national law, the organizational issue should not affect
1710 Single Window Interoperability.

4.5.   Identification, Authentication and Authorisation Procedure

1712 The legal issues emanating from the identification, authentication and authorization procedures are
1713 critical and complex in the context of SWI and consistent application of these procedures is vital. In
1714 any State across the world, the authorities involved and other potential users of a Single Window
1715 facility should take into consideration UN/CEFACT Recommendation 14 in assessing the needs and
1716 levels of authentication.

1718 Recommendation 14 states that, as far as possible, the requirement of a signature (manuscript or its
1719 electronic functional equivalent) should be eliminated unless it is essential in the context of the
1720 transaction. [19] Depending on the scope and objectives of the SWI, consideration should eventually
1721 be given to the authentication methods, which are 'as reliable as appropriate' for a particular
1722 transaction within a country.

1724 For example, if the aim of SWI is just to share and disseminate information about the trader or the

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[19] UN/CEFACT, *Recommendation No. 14: Authentication of Trade Documents,* UN Doc
ECE/TRADE/C/CEFACT/2014/6/Add.1 (April 2014). Available at http://www.unece.org/tradewelcome/areas-of-
work/un-centre-for-trade-facilitation-and-e-business-uncefact/outputs/cefactrecommendationsrec-index/list-of-trade-
facilitation-recommendations-n-11-to-15.html (accessed 12 September 2014).

1725 trade transaction volume to formulate border management strategy, a low level of authentication
1726 may adequate. Similarly, if a trader or its agent is an Authorized Economic Operator (AEO) or has
1727 signed a separate contract with the Customs agency (or the Single Window facility) [by putting in
1728 place necessary financial guarantees], then only a low-level authentication may be needed for filing
1729 individual Customs declarations.
1730
1731 However, States that participate in the exchange of information between their Single Window
1732 systems need to undertake a risk assessment to determine if the selected authentication method in
1733 each State is reliable enough to ensure safe and secure information exchange between the trader
1734 and the local Single Window (B2G). Thus, there can be an understanding that the information being
1735 conveyed to another National SW will take into account the nature of the information and the risks
1736 involved. Should the assessment lead to a positive result, the cooperating States should mutually
1737 recognize each other´s authentication methods for exchanges of data emanating from the trader in
1738 the trader's country of origin.
1739
1740 A similar assessment may be required to ascertain whether the authentication methods used by the
1741 government authorities are robust enough to ensure safe and secure information transmission
1742 between the Single Windows of cooperating States (G2G). While forming a cross-border
1743 authentication policy for SWI, the cooperating States should either agree on a common
1744 authentication standard in information exchanges between them or mutually recognize the
1745 standards of other cooperating States.
1746
1747 The creation of a legal framework that provides equal legal status and acceptability to modern
1748 authentication methods is crucial for SWI. Cooperating States should, where appropriate, take into
1749 account and adopt international legal standards/instruments and guidelines which serve as a
1750 benchmark when creating a legal framework to ensure its compatibility with the global legal
1751 infrastructure for the seamless exchange of electronic information.[20] The series of legal texts
1752 developed by the United Nations Commission on International Trade Law (UNCITRAL) provide tools
1753 for reaching a uniform legal framework and also for the legal recognition of authentication
1754 methods.[21] Cooperating States should also take into consideration the emerging best practices such
1755 as the legal architecture of the Association of Southeast Asian Nations (ASEAN) and recent work at
1756 the UN Economic and Social Commission for Asia and the Pacific (UNESCAP) to make a Single
1757 Window facility legally interoperable.[22]

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[20] Hemali Shah and Ashish Srivastava, 'Authentication and Recognition Issues in Cross-Border Single Window' (2013) 47:6 *Journal of World Trade,* 1252. Available at <http://www.kluwerlawonline.com/abstract.php?area=Journals&id=TRAD2013041> (accessed 12 September 2014).

[21] These include UNCITRAL Model Law on Electronic Commerce 1996, UNCITRAL Model Law on Electronic Signature 2001 and the UN Convention on the Use of Electronic Communication in International Contracts 2005. Available at <http://www.uncitral.org/uncitral/uncitral_texts/electronic_commerce.html> (accessed 12 September 2014). See also, the UNCITRAL Guidance document, Promoting Confidence in Electronic Commerce: Legal Issues on International Use of Electronic Authentication And Signature Methods. Available at < http://www.uncitral.org/uncitral/en/publications/publications.html> (accessed 12 September 2014)

[22] It should be noted that the ASEAN Member States have completed drafting a *Protocol on the Legal Framework to Implement the ASEAN Single Window* to ensure that "…their local laws are synchronised for both Single Window at the national level and ASEAN Single Window". This draft Protocol is expected to be signed in 2015. Consideration may also be given by the cooperating States to the Framework Arrangement/Agreement on Facilitation of Cross-border Paperless Trade for the Asia Pacific Region of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP). Available at <http://www.unescap.org/events/ad-hoc-intergovernmental-meeting-regional-arrangement-facilitation-cross-border-paperless> (accessed 12 September 2014). Work on this international text is continuing through an Interim Intergovernmental Steering Group approved by the Commission at its Plenary Session in August 2014. *See also*, UNESCAP, *Electronic Single Window Legal Issues: A Capacity Building Guide*, pp. 20-32 (2012), available at http://www.unescap.org/sites/default/files/0%20-%20Full%20Report_4.pdf (accessed 10 October 2014).

4.6. Ownership of data

Many legal systems cannot classify the issue of ownership of data as a legal right comparable with ownership of physical or tangible property, or intangible property such as intellectual property rights, business methodology, goodwill and brands. Yet, many contractual approaches to the submission of data to Single Window systems recognize that the end user may, to a certain extent, dispose of the use of the data that the end user submits to the system. Such a provision would affect the rights of Single Window systems to exchange information with each other.

Reference may be made to the principle 5 as spelled out in item 4.2, *supra*. The application of the principle would lead to the limited use of the data submitted even without a contractual provision. The application of the principle would make contractual clauses less necessary and would apply in situations in which the submission of information by the end user to the Single Window is not regulated contractually.

The need to regulate the use of information in the exchange of data between the authorities of different States is especially motivated by the fact that States may exercise jurisdiction in situations with an international dimension differently, sometimes resorting to extraterritorial jurisdiction.

4.7. Right to obtain data from the Single Window

This may constitute a legal issue affecting Single Window systems, and cross-border dimension may add complexity to it. States have very different policies as to the access to public documents and transparency. Customs information, however, is generally treated with confidentiality but other types of information are necessarily not. The different treatment of information could cause problems in the transfer of information. These are often constitutional issues and are seldom subject to legal harmonization. Constitutional rights are normally enjoyed by the citizens, or local residents only, and not by foreigners.

4.8. Privacy and protection of commercial information

Data protection and privacy laws are generally national although some international regimes such as that adopted under the auspices of the Council of Europe exist. There exist methods to transmit personal data to other countries with sufficient level of legal protection. If such legislation does not exist, a contractual solution to the same effect may used. In the Customs arena, too, most Customs laws include confidentiality provisions to protect information submitted for trade transactions and some include criminal penalties for unlawful release of such data.

For example, the European Commission has produced model contracts to transfer data to countries which do not have legislation with protection equivalent with the EU.[23] If the EU recognized the standards of the country where the data is to be transferred, such as the United States, no contract is needed.

Most States have legislation on the protection of commercial secrets generally and additionally to meet treaty requirements under the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). Protection of commercial secrets, trade data, etc. is often the subject of legislative and regulatory measures in many countries.

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[23] See the model clauses at http://ec.europa.eu/justice/data-protection/document/international-transfers/transfer/index_en.htm.

4.9. Accuracy and integrity of data

The accuracy and completeness of data is an issue that relates mainly to the competence and integrity of the party submitting information. If the information is submitted by a public authority, there exists at least a presumption of its accuracy. For public bodies issuing documents, the Single Window providing the information may be presumed to have provided accurate and complete information, unless fraud or falsification is demonstrated or obvious. For individuals, the administrative and criminal laws of the receiving country's Single Window (whose regulatory procedures are seized) may prevail. This may lead to questions of personal jurisdiction that may be complicated by national laws and constitutional protections for citizens. At least for non-criminal issues, such issues may be addressed in agreements related to SWI.

The technical integrity of data may also be subject to information security solutions that may be applied in the SWI environment. Usually, a party administering an information system has legal obligations to maintain information security. Information security standards should be addressed in the SWI agreements between the parties. Data hosting may be an issue addressed in this context. Some States regulate the hosting of their administrative data when outsourced.

4.10. Liability issues

In the context of this SWI Recommendation, liability usually refers to civil liability as distinct from criminal liability. The party incurring liability may be held liable for his or her acts or omissions in the context of operation or use of the SW. The liability may be based on statutory requirement, on a provision in a contract such as a User Agreement or may be tortious. Liability may be strict so that it does not presuppose negligence, or it may be based on negligence. A general requirement is causality between an act and the harmful consequence. Governments entering SWI agreements will need to address these issues particularly since they may have implications for the contractual relationships between private sector trading partners utilizing the Single Windows in each country.

Liability is one of the complicated issues in a cross-border context since in order to determine liability of any party, one needs to take into account in which jurisdiction the liability is to be determined, i.e. jurisdiction issues. Moreover, a court (or an arbitral tribunal where arbitration is possible) needs to determine what substantive rules will be applied to determine who may be held liable and in what situations liability arises.

Ordinarily, the SW operator will not be liable for the data content submitted by the private sector user of the Single Window. Where private sector operators of Single Windows (usually under contract with a government) are involved, there is a tendency of SW operators to include exculpatory clauses in end-user Agreements *vis-à-vis* the parties. SW operators could also agree on liability issues on a transnational basis e.g. by exculpating themselves from errors contained in the data submitted by the end user which they transmit to another Single Window, or by agreeing on liability standards to be applied in the B2B cooperation.

See also jurisdiction and dispute resolution in items 4.10 and 4.15 respectively, *infra*.

4.11. Jurisdiction

Jurisdiction may be divided for the purposes of operating Single Window systems into 1) administrative, 2) civil and 3) criminal jurisdiction. The territorial scope of jurisdiction is a relevant issue also in this context since each State or a supranational organization such as the EU may define its own jurisdiction. Sometimes, jurisdiction may be extended to situations where there are only limited connecting factors to the country or organization exercising jurisdiction. In the extreme,

1847   States may exercise extraterritorial jurisdiction.

1849   States usually regard the right to have administrative and criminal jurisdiction relating to compliance
1850   with their administrative procedures indispensable. As both the administrative and criminal law and
1851   jurisdiction are national, States exercise jurisdiction in the presence of the company or person in the
1852   jurisdiction. This is a requirement for the establishment of jurisdiction and also makes enforcement
1853   possible. Often, therefore, States prescribe the need to appoint a local agent (such as a tax agent) to
1854   connect with the Single Window or the authorities of the country otherwise. This way there is a
1855   party within its jurisdiction to bear the liability. The financial obligations may be enhanced by
1856   requirements of putting up a security.

1858   The exercise of jurisdiction in civil matters may be based on conventions and treaties but each
1859   country defines in its domestic law how the jurisdiction of the State courts is established. Civil
1860   jurisdiction is relevant especially when the relationship between the Single Window systems, or
1861   between an end user and the Single Window, is based on contract, or when non-contractual (tort)
1862   liability is involved. Extraterritoriality may be particularly relevant when coupled with particularly
1863   excessive civil liability regimes.

1865   While this Recommendation does not explore the detailed implications of criminal law issues,
1866   governments should consider these issues in establishing SWI. For example, if company X from
1867   country B were to violate the criminal laws of country A by submitting false information or forged
1868   records or data to the authorities of country A, how will this be addressed? The breach of regulatory
1869   provisions, e.g. by submitting false information, may lead to criminal actions which in turn require
1870   jurisdiction. Therefore, States normally refuse to deal with parties they do not recognize and which
1871   do not have presence in their jurisdiction.

1873   In criminal law, the application of domestic law is always connected with jurisdiction. In fact, the
1874   international aspects of criminal laws are presented as jurisdictional issues. If country A exercises
1875   criminal jurisdiction on individual Y, a national and resident of country B, this usually presupposes
1876   the presence of Y within the jurisdiction of A either by being caught there or after having been
1877   extradited to country A by country B.

1879   In dealing with the possible criminal liability of corporate entities, additional problems may arise.
1880   Further, difficulties in this area may arise, for example, if the cooperating SWI countries A and B have
1881   very different approaches to the application of criminal laws in cross-border situations on dispute
1882   resolution.

1884   See further item 4.15 on dispute resolution, *infra*.

1885   **4.12.   Data retention, archiving, and audit trails**

1886   Each State in developing the national law (often through operating regulations) for its Single
1887   Window will define data retention and archiving, as well as audit trail, requirements. The use of
1888   archived information may be needed to fulfil a transaction between two Single Window systems.
1889   Different approaches to access to information and transparency in different countries may pose
1890   problems in respect of archived data. Thus, countries should carefully examine these requirements
1891   domestically and those of countries with which it may enter SWI agreements. Those SWI
1892   agreements may address the requirements expected for each participating country's SW in these
1893   areas.

4.13. Intellectual property and database ownership

It is submitted that these issues are merely organizational and should not have cross-border dimensions. International conventions on intellectual property create much harmony, due to which fewer problems should arise. The WTO TRIPS Agreement includes provisions on the protection of business secrets as well as enforcement of intellectual property rights under Part III.

4.14. Competition law

Competition law issues are mainly national law issues, or are applied in uniform markets such as the EU. Competition law nevertheless has a grip on some harmonization measures between companies. It is submitted that competition laws would not pose any obstacle to Single Window Interoperability, unless the structure of the system is used to restrict competition. In any event, governments should carefully review their obligations under the WTO agreements applicable to competition issues.

4.15. Dispute resolution

As has been noted in item 4.11 above, there are basically three types of disputes that could arise in the context of Single Window Interoperability: 1) administrative, 2) civil, and 3) criminal.
Since Single Windows are a trade facilitation tool for governments, the substantive issues at stake are, it is submitted, predominantly administrative.

Single Windows are mainly seen as a channel of information, and administrative procedures and litigations are not affected by the means of communication. However, there may be instances where disputes between National Single Windows arise, for example, where one Single Window does not meet performance criteria (such as timeliness) and damages result for traders.

Given the costs of litigation, as well as other factors, it may be beneficial to include express dispute resolution mechanisms such as arbitration clauses in the SWI agreement.