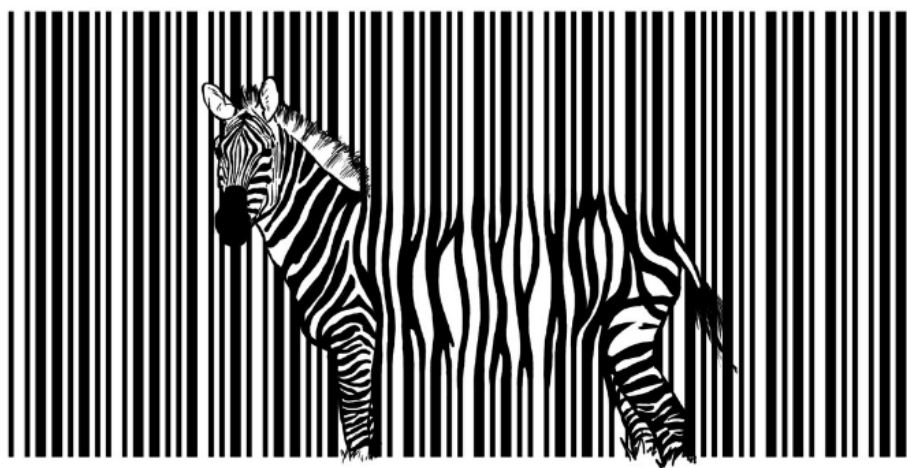# The eCITES Implementation Framework

A Practitioners Guide to implement electronic CITES Permits

Draft

NOTE

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1 About this Guide

Electronic CITES permits together with simplified and automated trade procedures will provide business opportunities for compliant traders. It will help governments to better target their inspections and identify those actors that break the law. CITES Management Authorities will be able save time and resources for checking and issuing permits, dedicate time for other important tasks in implementing the Convention and provide better services to traders. The CITES Stakeholders will benefit from faster and more robust reporting and better data to decide on non-detriment findings. The exchange of electronic permits and information across borders will increase transparency and prevent use of fraudulent permits.

The Guide presents a Framework to plan and manage the implementation of electronic CITES permits. The Framework divides the project into easily manageable sub projects which can be implemented in a stepwise approach. It helps project managers to better plan and oversee the implementation of CITES permitting systems, thus reducing project time, costs and risks.

The eCITES Project Framework is a component of a set of instruments, tools and capacity building activities that the Secretariat and the CITES Working Group on ePermitting provide to Parties. The Secretariat hopes that these tools will lead to fast and wide spread adoption of CITES electronic Permitting systems in the near future.

Target Audience

This guide is intended to serve project managers and decision makers in Government agencies, in particular from Management Authorities, the Scientific Authorities, Customs and the related Ministries to design, plan and implement projects for CITES ePermitting systems.

Outline of this Guide

The chapters in this Handbook are as follows:

Chapter 1 explains the purpose and the target audience of this Guide.

Chapter 2 presents the context of an eCITES project and the purpose of the Project Implementation Framework.

Chapter 3 describes the four main Business areas that the ePermit system shall automate and improve. These four areas are described in further detail in Chapters 5 to 9.

Chapter 4 discusses the tasks for implementation of electronic request for CITES permits, inspection, issuance of (electronic) permits and electronic payment.

Chapter 5 discusses the tasks for exchange of electronic Permits with Customs and other regulatory bodies, automated risk management and for improved control and statistics.

Chapter 6 explains the tasks for automated generation of annual trade reports.

Chapter 7 introduces into the current preparations to exchange electronic Permit information (EPIX) between Management Authorities of different countries.

Chapter 8 provides information on ASYCUDA eCITES, an off the shelf software solution for electronic CITES permits.

Annex 1 discusses strategies for migrating from paper to electronic CITES permits.

References to literature and best practice

This Guide incorporates many international recommendations and best practice for cross border trade as well as guides and training materials. It uses in particular the UN/CEFACT Recommendations for Single Window Implementation[1], data simplification[2] and consultation approaches between Government and Trade[3]. UNECE and UNESCAP developed the UNNExT Guide for implementation of UN/CEFACT messages in Agriculture Trade[4] which provided valuable contributions to this Guide. UNECE also developed a Guide on development if high level project plans for Facilitation Projects[5]. Finally this s Guide was reviewed by experienced project managers whose contributions are integrated in this document. The CITES Secretariat plans to update this Guide as new experiences in implementing electronic CITES permits become available.

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[1] Recommendation N°. 33 - Single Window Recommendation
[2] Recommendation N°. 34 - Data Simplification and Standardization for International Trade
[3] Recommendation N°. 40 - Consultation approaches Best Practices in Trade and Government Consultation on Trade Facilitation matters
[4] Implementing UN/CEFACT eBusiness standards in agriculture trade (ECE/TRADE/428)
[5] Guide to Drafting a National Trade Facilitation Roadmap (ECE/TRADE/420)

2 Introduction into electronic CITES Permit Systems (eCITES)

Objectives of an electronic permitting system

Automation of business processes and information exchange through electronic documents is an important instrument to simplify trade and improve the application of national and international rules and regulations. World-wide Government administrations and traders are implementing electronic Business solutions to simplify and automate information exchange in the international supply chain, to better work together using eBusiness technology and to make trade more efficient and safe.

Many countries are now implementing Single Windows to strengthen regulatory control of Government agencies, to improve collaboration and information exchange and to provide better services to legitimate trade. A major component of a Single Window implementation is the transition from paper documents to electronic documents.

> A **Single Window** is a facility to exchange electronic information for export and import clearance. The purpose of a Single Window is to coordinate the activities of Government agencies in import and export control, to simplify procedures, improve regulatory control and to facilitate trade. Single Window is one of the measures that Governments are committed to implement under the (draft) WTO Trade Facilitation Agreement.

The concepts of paperless trade and Single Window are not limited to the introduction of information technology and paperless trade. Rather information technology and paperless trade are considered as means to improve trade procedures and collaboration of stakeholders. The objective is an overall improvement of the trade processes, using information technology as a driver to facilitate trade for legitimate traders and to strengthen trade regulations and control.

Therefore the scope of a project for electronic CITES permits is not restricted to the issuance of electronic CITES permits. The final objective of the implementation of electronic CITES

> **Definition eCITES**
>
> **Implementation of electronic CITES permits** (eCITES) is a project to simplify and automate business processes and establish collaboration of stakeholders through exchange of electronic information for an improved implementation of the CITES Convention.

permits is to improve and automate all business processes related to CITES permit issuance, exchange, control and reporting.

An electronic CITES permitting system in its final implementation stage should support the following business processes:

- Automated permit request and issuance including electronic requests of permits by traders, scheduling of inspections, recording of inspection results and issuance of permits to simplify procedures, reduce transaction time and make best use of the resources of the management authority
- Electronic payments of fees to increase revenue and reduce opportunities for corruption
- Electronic information exchange and workflow between government agencies, in particular between the Management Authority and Customs to strengthen controls
- Implementation of modern risk management methods based on past compliance of traders which may lead to preferential treatment of compliant traders
- Exchange of trusted and up-to-date permit information between authorities in the exporting and importing country
- Automated generation of data for annual trade reports and other relevant reports

It is evident that such a comprehensive project cannot be implemented in a single, one-time approach. Rather it is advisable to break the overall project into smaller, manageable sub-projects, each with its own objectives and specific value for the stakeholders. Parties can then implement their electronic permitting system in a stepwise approach.

This step wise approach significantly reduces the implementation risks and required resources and allows the country to adapt the project implementation to the time required for reforms in government agencies and the private sector.

eCITES Project Framework to develop the national Master Plan

This Guide is based on recognised international best practice and experiences made in Single Window and eBusiness projects and has been reviewed by international experts and senior project managers. Guidance provided in this document is generic in the sense that it will be beneficial in a "typical" eCITES project.

Project managers need to keep in mind that every project is different and needs to respond to the specific requirements and conditions in the implementing country. Therefore the impact of any recommendation given in this Guide should be assessed and validated in the light of the specific situation in the country and adapted as required. The outcome of this

review s**h**ould be captured in a high level project plan for the eCITES implementation in the country. The Secretariat can provide assistance in developing such a project document

Recommendation to draft an eCITES Project Master Plan
A **high level project implementation plan** (master plan) should be developed prior to the implementation. The master plan shall insure that all stakeholders have a common understanding of the work to be undertaken. The plan should identify the objectives of the project, the project phases and activities, the expected improvements for the stakeholders, Key Performance Indicators to measure implementation success and the envisaged governance structure for the project

3 The components of an electronic CITES project

Implementation of electronic CITES permitting system means that all procedures relating to the processing of the CITES permit such as request for a permit, inspection of the consignment, issuance of the permit, checking of the permit during the export and import procedure, cross border exchange with other management Authorities and generation of CITES annual reports and trade statistics are supported by the eCITES system.

An eCITES system should be implemented in a phased implementation approach, were each phase automates a specific area of business processes. The implementation of all areas provides a complete automation of the CITES permit processing.

We have structured the implementation process into four sub projects with related business processes and stakeholders:

1. **ePermit - Simplified permit issuance:** This pillar provides automation mainly between the CITES Management Authority and the exporters and importers. It automates business processes related to request of permits by traders, assessment of risks and scheduling of inspection, logging of inspection results, issuance of permit including electronic records of the permits and electronic payment of fees.

2. **eControl - Border agency collaboration for better controls**: This pillar implements automated procedures between the Management Authority and other control agencies, thus providing automation on the national level. This includes exchange of permit data with Customs and other border agencies, use of electronic risk management techniques, improved data validation and Single Window integration of permits.

3. **eReport [6]- Automated reporting**: This pillar implements automated exchange of data Management Authority and the CITES Secretariat to meet annual reporting requirements.

4. **eExchange – electronic permit exchange with other countries**: This pillar implements automated exchange of electronic permits between CITES trading countries. It automates business processes for cross border exchange of permits for secure and integrated management of the trade transaction between the exporting, importing and transit countries.

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[6] The business processes for eReport and eExchange solutions are currently developed by WCMC and the CITES Secretariat. Therefore we do not provide a description of the implementation of these steps at this moment.
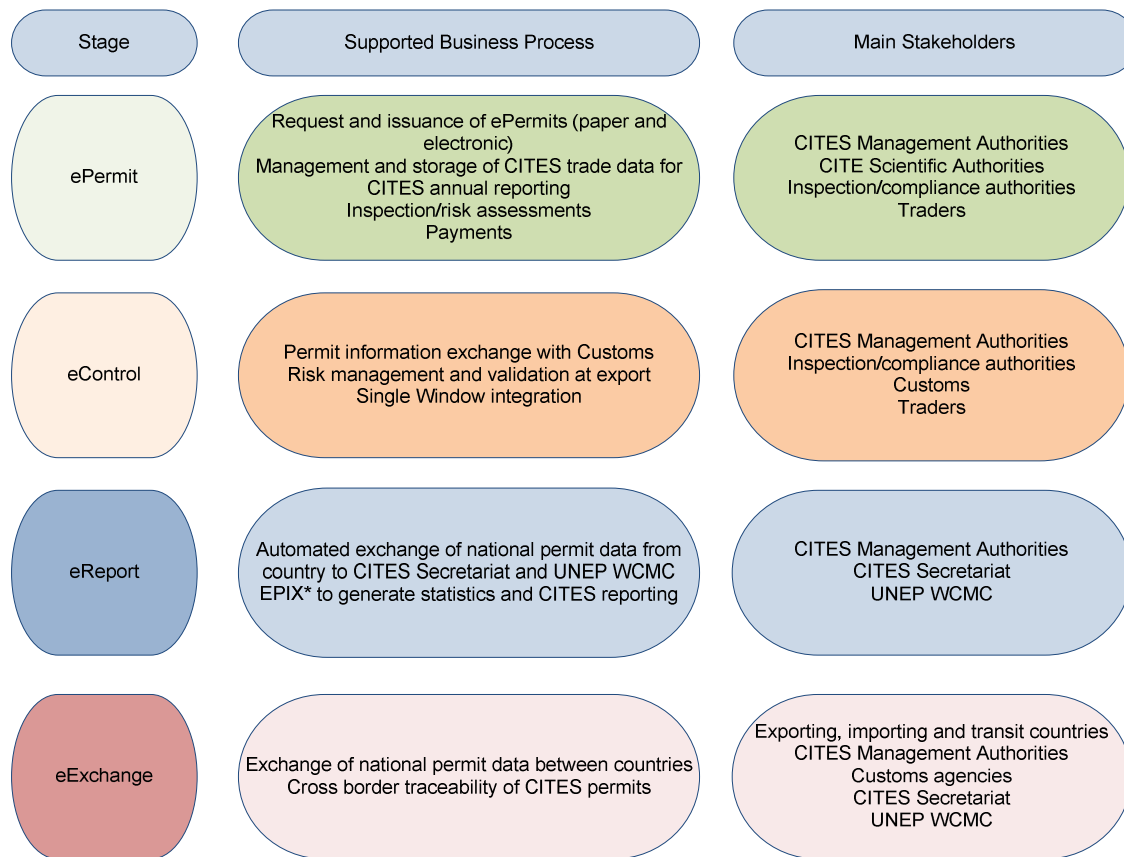
Stage	Supported Business Process	Main Stakeholders
ePermit	Request and issuance of ePermits (paper and electronic) Management and storage of CITES trade data for CITES annual reporting Inspection/risk assessments Payments	CITES Management Authorities CITE Scientific Authorities Inspection/compliance authorities Traders
eControl	Permit information exchange with Customs Risk management and validation at export Single Window integration	CITES Management Authorities Inspection/compliance authorities Customs Traders
eReport	Automated exchange of national permit data from country to CITES Secretariat and UNEP WCMC EPIX* to generate statistics and CITES reporting	CITES Management Authorities CITES Secretariat UNEP WCMC
eExchange	Exchange of national permit data between countries Cross border traceability of CITES permits	Exporting, importing and transit countries CITES Management Authorities Customs agencies CITES Secretariat UNEP WCMC

Figure 1 Summary of the main project components in the implementation of a CITES ePermitting system

It is suggested to implement the national eCITES system in the sequence described above, starting with the ePermit and then eControl system followed by the eReport and eExchange systems.

In the following chapters we will describe in more detail each of these four project components. For each component we will start with a short summary of the activities to be implemented. We then group these activities into different steps which can be implemented as sub-projects and discuss important aspects for the project management. We conclude each chapter with a set of recommendations for the project managers both with regard to technical and non-technical (managerial) aspects.

4 ePermit: Simplified and automated application and issuance of permits

The ePermit project component will simplify and automate the business processes and information exchanges between traders, the Management Authority and the Scientific Authority for request and issuance of CITES permits.

Traders can fill in requests for permits using Web based applications. These applications provide code lists for structured data input and check the data provided by the traders for completeness and consistency.   As a result the Management Authority will receive quality data for permit application which can be used for risk analysis, improved schedule of inspections and to record inspection results.

Improved access to information and documented compliance of traders may also allow the management Authority to analyse risk and to implement an "Authorised CITES Trader" scheme[7]: The CITES Management Authority defines a set of criteria for traders to qualify for the Scheme. Criteria could be, for example, low CITES related risk of the traded species, the professionalism of the trader and the compliance history of the trade. Traders that meet the defined criteria enjoy benefits in form of facilitated procedures or less controls with inspections carried out only on a random basis.

Were national legislation allows electronic payment of fees the ePermit project component should also provide functionality for electronic payment for issuance of the permit. This will simplify the processes and avoid cash transactions between traders and Government officials.

The main beneficiaries are the Management Authorities and the traders (exporters and importers):

- Management Authorities receive quality data to decide on permit issuance. They can better schedule and allocate inspectors and focus their controls on high risk transactions. All permits issued are accessible in an electronic database for control and statistics. The different steps of the permit issuing process are recorded in the system and can be audited. The simplification of procedures, increased transparency of the issuance process and electronic payments significantly reduce opportunities for informal payments and leads to improvement of regulatory control and revenue of the Management Authority.
- Traders will benefit from streamlined and simplified processes reducing the delays in export and import. This is of particular benefit for export of live and/or perishable goods. Online application for permits and access to information on the current state of approval process helps traders to improve planning and disposition.

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[7] Risk management and Authorized Economic Operators are concepts used by Customs organizations world-wide to focus available inspection resources and to improve compliance of traders. They are not yet commonly used in CITES permit processing.

Example: The introduction of an electronic CITES permitting system in Switzerland reduced the processing time for CITES permits from 10 - 20 days to 5 hours - 3 days. Traders can choose between different guaranteed permit processing times (same day, next day and three days), paying higher fees for expedited permit processing. The system has led to increase revenue of the Maintenance Authority and reduction of resources for processing. The investments into the Swiss CITES permitting system have been recovered after less than 1 year.

There are two main steps in implementing the ePermit project component:

Step 1 Simplified and automated permit application

Development of an Internet based application that allows traders to request issuance of a CITES permit. The application provides traders with data entry and validation screens, help functions and information on changes in regulations.

The application should enforce use of CITES recommended code lists for Permits as specified in Resolutions Conf. 12.3. The application could also interface with the CITES Species+ Application Programming Interface (API)[8]. The Species+ API allows automated updated of the national eCITES system with latest CITES information on CITES taxonomy including scientific names and common names of species. This ensures that standard nomenclatures adopted by the Conference of the Parties to indicate the names of species are used in the permit request.

The application should also enforce use of relevant code lists for trade, in particular UNECE recommendations[9] on locations (UN/LOCODE), ISO country codes.

The application should have a tracking functionality so traders are informed about the current state of the Permit approval and receive notification on scheduled inspections and when the permit has been issued.

Step 2 Digital enhanced inspection and permit issuance

The Management Authority will use the information submitted by the trader to evaluate the risk of the trade transaction for example by taking into account past compliance history of the trader and decide whether an inspection is required, assign an inspector and schedule the inspection[10].

Is important that relevant information on inspections conducted, in particular inspection time and observations are recorded in electronic format are stored in the system. It might be useful to equip inspectors with portable electronic devices to ensure that all relevant data are readily available in the eCITES system.

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[8] http://api.speciesplus.net/
[9] For relevant UNECE Recommendations see https://www.unece.org/cefact/recommendations/rec_index.html
[10] Parties have implemented different approaches to CITES inspection. For example, in Brazil inspections are carried out by Customs and only after the permit has been issued. CITES inspections in Brazil are therefore considered part of the Customs clearance process (see discussion on eControl in the next chapter).

As of present, all CITES Parties issue their permits in paper format. The eCITES system will keep an electronic record of the permit information in its database and print the paper permit from this data record. This means that the eCITES database holds a complete record of all requested permits, their approval process and the final permits issued.

The trader will be able to access the electronic permit for information through the eCITES application. The electronic permit is also used to exchange permit information with Customs authorities and with foreign Management Agencies.

The electronic information can also be used to exchange information with other agencies for coordinated inspections, in particular for joint inspection and issuance of CITES and the Sanitary and Phytosanitary (SPS) certificate.

Step	Activities	Improvements
Electronic permit application	• Permit application through Internet • Tracking of permit issuance progress • Latest regulations and codes online	• Simplified porcess • Quality data for MA • Improved scheduling of inspections and consignments
Enhanced digital inspection	• Electronic recording of inspection results • Electronic CITES permit • Electronic payment	• Transparancy in the inspection process • Permit and inspection results immediatly available • No cash payments involved

Figure 2 The two main steps in implementing the ePermit project component

The access to information of all pending applications for CITES permits through a database system will allow the Management Authority to plan and coordinate its activities and to improve its regulatory control. To take full advantage of the electronic system it might be necessary to adapt the workflow and administrative processes of the Management Authority.

Recommendations to Project Managers

This chapter provides general recommendations and guidance for the automation of CITES permits. It is based on experience made in projects for automation of permits around the world and will be updated as new experience from CITES implementations becomes available.

Recommendations for the ePermit project implementation

- The Management Authority has the lead in overseeing the eCITES project implementation. Traders will be main stakeholders of the future system. They will incur costs to switch to the new system such as change of established work procedures, training, investments in ICT and possibly fees for electronic processing of permits. Therefore it is very important that traders have tangible benefits from the new system. The Management Authority should hold regular consultations with Traders and may also provide them with the possibility to participate in the steering to the project to ensure that the project brings tangible net benefits.

Implementers from Brazil suggest that the Single Window should take leadership of the CITES project in case a national Single Window exists. Similarly in Thailand the eCITES project was implemented under the national Single Window programme.

- Automation of CITES permits is about improvement of business processes and work flows through automation of procedures. This requires an analysis of the current business processes, an identification of the areas that should be improved which may lead to changes in the organization of work in the Management Authority and the private sector and the way they work together.

- Change management is a very important part of the project. This requires significant efforts in capacity building, training and consultation.

- The project should increase trust and collaboration between the private sector and the authorities. Traders should be educated to meet the requirements of the Management Authority. The project should exercise pressure on the traders to become fully compliant at all times.

- The system should provide traders with access to latest regulations and checking routines for data consistency to ensure that traders to submit compliant permit requests.

- Business processes related to request and issuance of certificates and the inspection need to be documented and well understood. It is recommended to conduct a business processes analysis (BPA) prior as part of the project implementation. The process analysis helps to identify shortcomings of the current processes and design a new and improved system. The BPA also provides the basis for the eCITES technical implementation. Guidance on who to conduct Business Process Analysis is provided by UNECE and ESCAP[1]

- The CITES ePermitting system supports international trade transactions. It needs to fully integrate into international business practice for cross border trade and the technologies used for information exchange. The format of the electronic CITES permit should follow the specifications provided in the CITES ePermitting Toolkit.

- The ePermit system needs to be available 24/7. This requires professional support not only during work hours but also on weekends, at night and during public holidays. Management Authorities may not have the resources available to provide this level of support in house. The Management Authority may choose other ways to provide the required system availability, for example through

  - **Joint regional** ePermit **operation centre**: several countries host their national ePermitting system in a joint regional support centre. The different national ePermitting system can share the same physical platform on which completely independent national ePermit platforms are running (virtualization). This allows each Management Authority to own and fully control their own national ePermitting system while benefitting from shared maintenance and technical support.
  - **Hosted by other another government agency:** In particular national Customs organizations have extensive IT operations and capabilities to provide 24/7 support. Service agreements could be concluded to host the permitting system. This can be of particular interest for countries that use the ASYCUDA both for CITES management and for Customs data management. Both system share a common software platform (database and operating system, software development system, control tables...) which can lead to significant economies of scale. As in the case of a regional support centre, this arrangement does not prevent the Management Authority from fully owning the system.
  - **Software as a Service:** A service provider will fully host the solution and provide the all functionality required for eCITES processing in the country. In this case the Management Authority Is no implicated in the technical and maintenance issues and pays for the services provided. Different financing models exist, often on a "pay as you go" basis.

5 eControl: Integrated Border Agency Collaboration

This eControl project component implements the exchange of CITES permit data between the Management Authority and Customs to improve import and export control.

The main challenge in implementing the eControl component is to integrate electronic CITES permit information into the Customs decision making and trade control system. This requires good understanding of the CITES and Customs Authorities on their respective approval and control procedures, joint understanding of the trade related risks and collaboration in managing this risk.   It is suggested that both authorities establish a joint steering group to supervise the project implementation.

Overview of electronic CITES permits in Customs declaration processing

To import or export goods traders need to provide all relevant information in a Customs declaration. The Customs declaration is submitted by the declarant which usually is the importer/exporter or his nominated agent.

Most Customs organizations will use the Single Administrative Document (SAD) as standard layout for their Customs declaration form.

From the point of view of Customs the CITES permit is a "supporting document", i.e. it is one of the required documents that need to be attached to the Customs declaration if the consignment includes CITES listed species. The declarant will provide the CITES permit as a paper copy or original together with the declaration[11].   The CITES identification number of the permit is entered in Box 44 of the SAD[12].

Figure 3 SAD Box 44, European Union Single Administrative Form

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[11] National Customs administrations may implement different rules, for example require paper originals to be submitted or waive the need to submit paper documents all together and instead require that declarants can procure the originals of these documents on request.

[12] Box numbers may vary in different countries. We make referent here to the EU SAD
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374245/c88_1-8_.pdf

Based on the information provided in the declaration Customs will:

- Identify whether a CITES permit is required
- Assess the regulatory risk of the export/import. This decision is often made by an automated risk assessment module which is part of the Customs data processing system
- Decide whether the goods are automatically cleared, undergo a documentary check or are physically inspected. This decision is usually made by the risk assessment module
- Check the validity of the CITES permits and the consistency of data the between Customs declaration and CITES permit
- Update the information in the CITES permit and submit the updated permit to the Management Authority.

From the perspective of the CITES convention Customs supports four important business processes[13]:

1. Customs assess **whether a CITES permit is required for the import or export of this species**. This is not a straight forward task as in the Customs declaration form the goods are classified according to the Harmonised System (HS) code while CITES species are classified by another classification scheme. Therefore the Customs data management system has no means to decide in an automated manner whether the export of the declared goods requires a CITES permit if the declarant has not listed the CITES permit number in box 44.

   For the automation of the CITES permit process it is very important that the Management Authority works together with Customs to identify the most important CITES species that are traded by the country and to include references in the HS table[14] that is used by the Customs data management system. This way the Customs data management system can alert the Customs inspection services if a declaration is submitted with an HS code that may relate to CITES controlled species.

2. Customs checks **the validity of the CITES permit**. Checking the validity[15] of the permit includes two aspects:

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[13]The CITES training module *Introduction to CITES for Customs* https://cites.unia.es/course/view.php?id=6 describes the CITES permit processing form a Customs perspective.

[14] Custom will refer to this table as the *Tariff*. The Tariff is a table that includes the classification of the goods, the duty rates and links to relevant legislation. It is organised by HS code.

[15] For information on practice for documentary checks of CITES permits see https://cites.unia.es/mod/resource/view.php?id=694 . A step-by-step verification chart is provided at https://cites.unia.es/cites/file.php/6/files/pvc.pdf

- Validity of the permit itself, for example whether the permit is not expired and has not been used before.
- Cross check between the data in the Customs declaration and the CITES permit, i.e. whether description of the species (CITES) and goods (Customs), countries of origin and destination, quantities etc. match.

3. Customs needs to **amend box 14 and 15 of the CITES permit** with details on the export/import process (permit endorsement):

Figure 4 CITES permit boxes 14 and 15 to be filled in by Customs

Box 14 relates to the actual quantities that are exported/imported. These quantities may be lower than the maximum quantities authorized in the permit. It is highly important for the CITES Management Authority to receive this information to know whether the permit has been used and also to generate statistics which are needed for effective protection of the species.

Box 15 contains the identification of the transport document[16] and the information on the date and location. Again, this information is highly relevant for the implementation of the convention.

4. Customs needs to **inform the Management Authority** that the permit has been used and transmit the data in box 14 and 15. Customs should also inform the management authority on any relevant findings, in particular rejected declarations and permits.

The tree main Steps in implementing the eControl Project Component

There are three main steps in implementing the eControl project component. The first two steps provide Customers with access to the electronic Permits and the Management Authority with information on the permits processed by Customs. These two steps are essential and should be implemented in full. The third step implements integrated risk

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[16] Typical international transport documents are Bill of Lading (sea), Waybill (sea and air), CIM/SMGS Consignment Note (railway) and CMR (road)

management and improved of CITES controls by Customs and should be implemented after the first two steps have been completed.

Step 1 Use of electronic CITES permits in the Customs declaration process

The declarant will provide the CITES permit number in the Customs declaration in the field for supporting documents. If Customs needs access to the permit, for example for documentary control, the Customs system will access the database of permits of the Management Authority.

The data standard for the electronic CITES permit exchange is defined in the CITES ePermitting toolkit. This standard is harmonised with the WCO Data Model[17], a standard used in the Customs world.

Step 2 Update of permits in the Permit database

When clearing the goods Customs should update information in CITES Box 14 & 15. If a dual[18] paper and electronic approach is used Customs needs to update both the paper and the electronic permit.

The electronic permit is updated through an electronic message sent by the Customs data management system to the CITES permit database. This message will update fields related to box 14 and 15 of the electronic permit and, at the same time, mark the permit as being used. It is important that the Management Authority can rely on the consistency and quality of the Customs data updates as this information is important for CITES reporting and decision making.

For the implementation of this step a joint technical team should be formed that conducts formal testing of the data transfer and updates procedures. The team should also define and test fall-back procedures in case of system failures. This is of particular importance for operations in remote border posts.

Given the importance of this process for CITES permit handling an audit of the effectiveness of the data exchange should be made on a regular basis.

Step 3 Risk Management for Improved Customs Control

Availability of electronic CITES data provides new opportunities for automated and improved checking of the permits and the Customs declaration. It is important that Customs takes

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[17] The WCO data model is a standard for electronic documents recommended by the WCO. Further information is available at http://www.wcoomd.org/en/topics/facilitation/instrument-and-tools/tools/pf_tools_datamodel.aspx

[18] See discussion in Annex 1 on transition from paper to electronic permits

advantage of these opportunities by changing from manual CITES permit processing to automated procedures were possible. Automation should include inter alia:

- Automated checking whether the permit is still valid by checking against the database of the Management Authority. These checks can be fully automated.
- Automated consistency checks between the data in the CUSTOMS declaration, the CITES permit and other supporting documents available in electronic format such as transport manifests.
- Customs should use information from the electronic CITES permits as parameter in their risk assessment system. For example if the declaration contains CITES Annex I species the risk management system could increase the evaluated risk. Customs should work together with the Management Authority to identify CITES relevant parameters for the Customs risk management system.

Step 3 is mainly affecting Customs internal work flows and must be implemented by Customs. Nevertheless it is important for the Management Authority to understand the level of automated controls that Customs has implemented as this will impact the enforcement of the Convention. Therefore the level of automated controls and their effectiveness should be reviewed on a regular basis and discussed in the joint steering committee.

Step	Activities	Improvements
Electronic permit	• Customs access to truted permits • Permit data is used in declaration clerance • Single Window integration	• Access to trusted data and less fraud • Fully electronic process • Permit data available for controls
Endorsement	• Update Boxes 14 & 15 • Update permit in trusted database	• Up to date information about export/import movements • Better statistics • Sustainable use of species
Risk managment	• Check validity of permit • Cross check between permit and declaration	• Targeted inspectins • Reduced fraud

Figure 5 Steps and activities when implementing the eControl project component

Recommendations for the eContol project implementation

- The main challenge in this step is to achieve integration of relevant business processes between Customs and Management Authority using electronic information exchange. This requires continuous good will on both sides, a strong leadership and high level managerial support.
- It is recommended that both the Management Authority, Customs and other participating border agencies set up a joint steering committee on the director level. This committee should meet on a regular basis to identify issues and to continuously supervise and improve the eControl component.
- For collaboration of stakeholders it is important that both sides understand each other's work procedures, legislative frameworks and constrains. Analysis of business processes on both sides and capacity building will contribute to this objective.
- The eControl pillar can be carried out as a component of the national Single Window system as it automates use of certificates in cross border trade. However, even in case a national Single Window exists it may be preferable to exchange data directly between Customs and the Management Authorities and ensure that the national Single Window has access to the permits for submission to other national authorities.
- All data exchange procedures need to be thoroughly tested by joint technical teams. There needs to be a continuous dialog on the progress of implementation of each side. It is also very important to have a common understanding how the exchanged information is used in the business processes on both sides. To achieve this it is important that both groups frequently work together and frequently organise site visits.
- The technical groups should report regularly to the steering committee on the implementation state.
- Management Authority and Customs should work together to define rules for validity checks of permits during the Customs declaration.
- An important part of the technical work is the harmonization of code lists used in the Customs declaration and in the CITES permit. This also requires synchronization of updates to these code lists on both organizations. Decisions on code lists should follow international best practice set by the UN and the WCO.
- Management Authority and Customs should work together to create mapping between the HS code and the CITES species code list for frequently traded species.

6 eReport: Simplified Annual Reports using electronic permit database

After ePermit and eControl components are implemented the CITES Management Authority will have a database which contains information on all permits that were requested and issued. This information provides a complete picture of all trade events and can be used to build the annual reports[19] that are submitted to the CITES Secretariat through an automated programme.

The eReport project component develops a set of database queries that extract and aggregate the relevant information from the national permit database and produce the required tables of information. The output of such a query could be, for example a spreadsheet or PDF report.

The development of such set of queries is a one-time task and can be done with very modest software development costs.

After the generation of the report the Management Authority should review the information provided in the report for any obvious inconsistencies.

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19 See also Guidelines for the preparation and submission of CITES annual reports
https://cites.org/eng/notif/2006/E-ARguide.pdf

7 eXchange: Exchange of electronic permits between Management Authorities

Some Parties are preparing studies and pilot projects for electronic CITES permit information exchange (EPIX) between Management Authorities. As these projects are work in progress and different approaches are discussed the focus of this chapter is limited to provide an introduction into EPIX.

Parties interested EPIX are advised to participate in the CITES Working Group on electronic Systems and Information technologies and to contact the CITES Secretariat for update on the latest state of development.

What is Electronic Permit Information Exchange?

The objective of EPIX is to

- allow safe, secure and reliable exchange of information of Permits between Parties
- reduce costs and effort of Parties for implementing, testing and maintaining electronic exchanges
- ensure conformity with the provisions of the Convention
- ensure compatibility of solutions system implemented by the Parties for permit information exchange
- ensure that permit information exchange is compatible with international standards and complements standards already included in the CITES ePermitting toolkit.

Definition: Electronic Permit Information Exchange (EPIX) is the exchange of electronic information related to CITES permits between Government administrations of belonging to different countries using standards recommended by CITES.

EPIX will provide a global mechanism for countries to verify legal permits and more easily detect illegal permits for international trade in species listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). This verification and detection functionality will provide Parties with an essential tool in the fight against illegal wildlife trade, while paving the way for increased transparency and sustainability of legal international wildlife trade.

Document workflow in permit exchanges

There are fundamental differences in the cross border exchange of paper and electronic Permits. Information in an electronic permit can be easily changed using an XML editor while changes in a paper permit will leave some form of trace. In addition, an electronic permit that has been used for an export operation cannot be stamped by Customs like a paper

permit. Therefore it could be used many times. To overcome these difficulties the document workflow for electronic CITES permits is different from the paper Permit workflow.

Document workflow for CITES paper Permits

Figure 5 describes the workflow of a paper permit. The Exporter requests a paper permit from the MA (Step 1). The MA creates a record in its permit database and issues a paper permit (Step 2). The exporter sends the paper permit to the Importer (Step 3). The Importer presents the Permit to Customs and/or to the MA (Step 4).
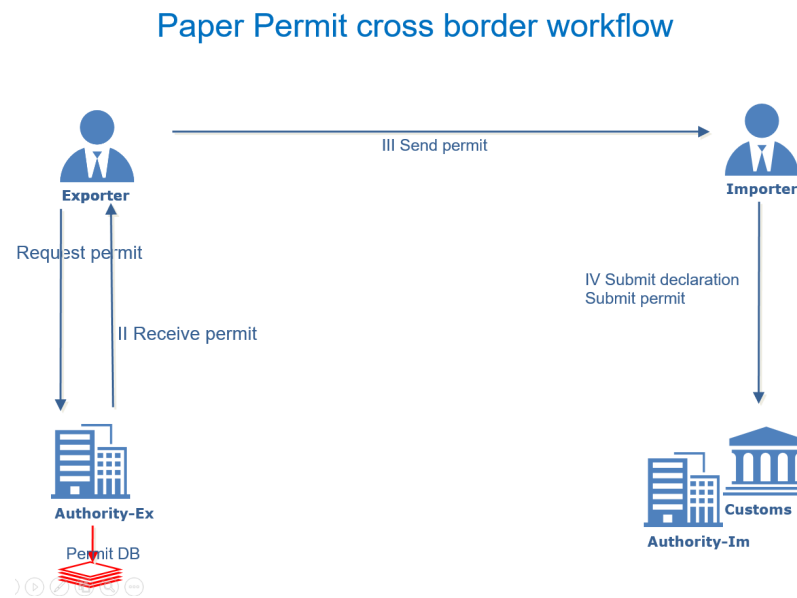

Figure 5 Cross border document flow of paper permits. Electronic components are marked in red

Document workflow for electronic CITES Permits

Figure 6 describes the workflow of an electronic permit exchange. The Exporter requests a permit from the MA (Step 1). The MA creates a record in its permit database and issues a permit identifier[20] (ID) (Step 2). The MA may also print a hardcopy of the electronic permit. However this copy will be marked as "COPY" and cannot be used for official use. The exporter sends the permit ID to the Importer (Step 3). The Importer sends the Permit ID to Customs and/or to the MA (Step 4). Customs/MA send an electronic request for the permit data to the issuing MA (Step 5). The issuing MA sends an electronic message with the permit data to the importing country (Step 6).

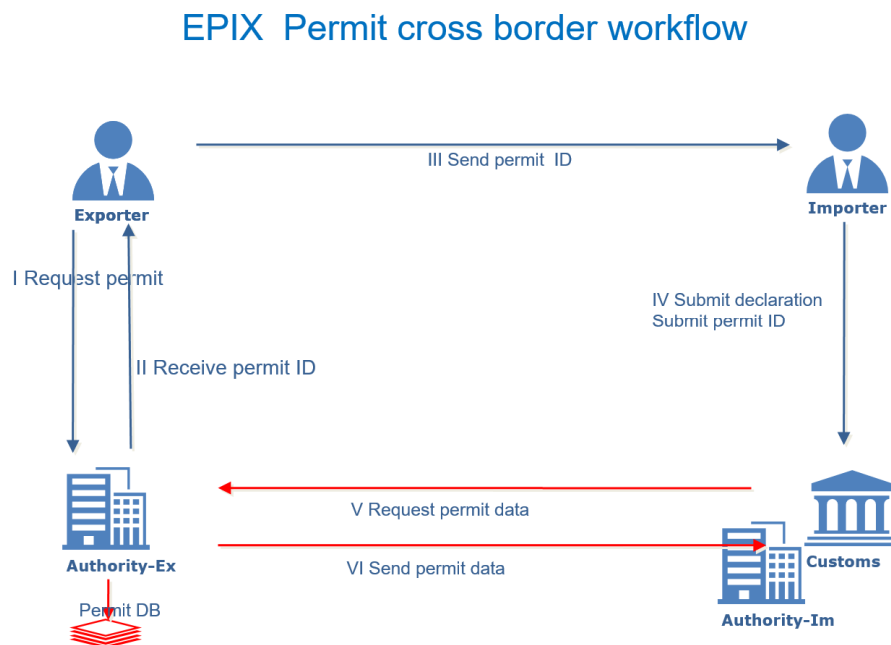EPIX Permit cross border workflow

Figure 6 EPIX electronic permit workflow Electronic components are marked in red

This workflow is substantially different from the paper workflow as the permits are now exchanged between the MAs. The exporter and importer only exchange the Permit ID.

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[20] On CITES permits the ID is referred to as the "PERMIT/CERTIFICTAE No.", printed in box 1 of the permit.

This means that responsibilities for procuring and exchanging the permit and for data confidentiality now lies with the Authorities in both countries. The authorities are responsible to the trader for the success of the exchange.

As a result, electronic Permit information exchanges will create direct message exchange and collaborative processes between Government agencies of different countries. This will significantly improve control of trade in CITES listed species.

8 The ASYCUDA eCITES system

The CITES Secretariat and UNCTAD have signed a Memorandum of Understanding[21] for the development of ASYCUDA eCITES, an electronic system to use electronic CITES permits. The software is an out-of-the-box CITES e-permitting system that can be configured to the specific needs of the country. It is implemented through a joint technical cooperation project between the Government agency, UNCATD and the CITES secretariat.

About ASYCUDA

The Automated SYstem for CUstoms DAta (ASYCUDA) is a programme of the United Nations Conference for Trade and Development (UNCTAD). ASYCUDA provides an automated Customs Data Management System which implements all functions of modern Customs management for international trade, including declaration processing, risk management, scheduling of inspections, automated calculation of taxes and fees, electronic payment, reporting and Single Window development.

ASYCUDA has over 30 years' experience in supporting administrations around the world. It is installed in over 95 countries. The system has been continuously enhanced and integrates with state-of-the art information and communication technologies. In particular it is adapted to meet the challenges of developing countries when implementing automated procedures in their administrations.

The system takes into account international codes and standards developed by International Organisation for Standardisation (ISO), World Customs Organization (WCO), World Trade Organisation (WTO) and the United Nations, including those guiding the development and implementation of Single Window environments WCO and the UN Economic Commission for Europe (UNECE). ASYCUDA applies standards set by CITES for electronic permits (CITES ePermitting Toolkit[22]) and FAO IPPC recommendations on electronic SPS.

The ASYCUDA software is developed by the UNCTAD ASYCUDA Programme and is provided free of charge to the interested countries, in the framework of technical assistance and training projects.

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[21] https://cites.org/eng/disc/coop.php
[22] https://cites.org/eng/prog/e/e-permitting-toolkit.php

8.1 The ASYCUDA eCITES software

The latest version of the system is ASYCUDA World. This version has been specifically developed to meet the requirements of all Government agencies that process licenses and permits for international trade. The ASYCUDA eCITES has been developed using ASYCUDA World.

ASYCUDA eCITES is based on a client - server architecture. The Client is an application that runs on a standard office computer. The Client application provides all functionality to the user such as entering a CITES permit request of browsing the list of approved permits. The server is a computer with a UNIX operating system which holds the data in a relational database. The server provides the clients with a central access to all information relating the CITES processing. For ASYCUDA eCITES high end office computer with a backup system is sufficient as a server. ASYCUDA client and server can run with different database and operating systems including free of charge Open Source based solutions[23].

8.2 Hosting and mainlining the ASYCUDA eCITES technical platform

The ASYCUDA eCITES implements business functionality for automated processing of CITES permits. It can be implemented either as a component of an ASYCUDA Customs system, as a component of the National Single Window or at a stands alone system, depending on the preferences of country. The system can be implemented in any country including countries that do not use ASYCUDA for Customs data processing.

The modularity of ASYCUDA and the compatibility with the Customs system gives the possibility to adapt the technical implementation to the requirements of the country and the state of the implementation:

For example, in the early phases of an implementation the main focus is the adaptation of the eCITES system to the business requirements of the CITES Management Authority and the training of the users. At this phase the implementation of a reliable technical backend server with 24/7 availability would be an additional complication for the project. By applying a modular implementation approach it is possible to separate technical implementation issues

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[23] Further information on the system requirements can be found on the ASYCUDA web site https://www.asycuda.org/awtechnology.asp

from the business requirements and to focus on the technical implementation after the business needs of the CITES Management Agencies have been met.

In the following we outline two major technical implementation choices that countries have.

- Hosted Service: eCITES AYCUDA server is provided and maintained by the ASYCUDA project. All maintenance and configuration is provided by project experts. The servers is configured to meet the specific requirements of the national eCITES implementation. The server is physically located either in the ASYCUDA Gibraltar training centre or in another regional centre.
  This solution allows the Management Authority to focus on the business requirements of the implementation first and avoid to get distracted by technical issues. As the implementation progresses the Management Authority can decide to build up a technical operations centre and to transfer a fully functional technical solution.
- eCITES Technical Operations Centre: The system is hosted and maintained by a technical group under the responsibility of the Management Authority. The main tasks of the Centre are to ensure availability of the system including maintenance of hardware and software, security, data backup, installation and test of new versions and technical support for client implementations. This requires extensive training of the technical experts in the operations centre.

It should be noted that combinations of the two approaches are possible. For example, in countries that use ASYCUDA for Customs there will be already a technical operations centre for ASYCUDA in the Customs administrations which provides 24/7 availability of the Customs system. The technical requirements for eCITES support are essentially the same as for the Customs support. If a service agreement with Customs can be reached then this Centre could also provide eCITES Technical Operations Centre which will provide significant synergies.

From a technical perspective ASYCUDA eCITES and ASYCUDA Customs are based on the same software development platform and hardware requirements. Countries that use ASYCUDA World for Customs may conclude a service level agreement with their Customs department to provide technical support and maintenances for eCITES.

ASYCUDA eCITES Software License

The ASYCUDA license agreement provides countries with all rights to use the software including access to the source codes and the right change and further develop the system.

The eCITES software is available to all UN member states for free in the framework of a technical assistance/training project. The technical assistance project will include components such as system analysis and configuration, implementation support, training and

maintenance assistance. This services are made available on a cost recovery basis were countries pay for staff salaries and costs associated with travel.

8.3 Steps in an ASYCUDA eCITES implementation

Each implementation of ASYCUDA eCITES consists of four major components: Project preparation, analysis of business processes, system configuration and implementation, capacity building of rollout and post implementation support:

1. **Stakeholder consultation, project scope and project launch**

   The project is presented to the relevant stakeholders in the country. The objectives and the scope of the project is discussed with the stakeholders and approved.

2. **Functional requirements , system configuration and implementation**

   CITES business processes and workflows that will be automated are analysed and documents. The methodology used in Business Process Analysis (BPA) which is a formal methodology to do document a workflow.   BPA is described in a Guide[24] developed jointly by UNECE and ESCAP and widely used for automation of trade procedures. During a BPA a team of analysts with conduct interviews with relevant stakeholders and document user requirements, information flows and legal and administrative requirements to specify the functional requirements of the system.

   The ASYCUDA eCITES module is configured to meet the functional requirements. This includes configuration of control tables and development of national code lists, testing of software with live data, implementation in pilot sites and rollout.

3. **Capacity building and training**

   Automation of business processes will always require adaptation of new procedures and a change of work flows. Along with the system implementation the project will provide capacity building and training of users to facilitate the integration of the new system into the existing work processes of the Management Authority.

4. **Post-implementation support**

   Occasional support required to address issues encountered and to adapt the system to changes.

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[24] UNNEXT Business Process Analysis Guide http://unnext.unescap.org/tools/business_process.asp

In a stepwise implementation project these three tasks will be required for each project phase; however time and resources required may greatly diminish as the project advances.

8.4 Sample cost plan of an ASYCUDA eCITES implementation

The estimated cost of a specific country project could vary significantly depending on the scope of the implementation, the number of agencies that will be integrated in the eCITES system, the CITES processes that are automated and the requirement of capacity building and support. There may be also opportunities to leverage synergies, for example with exiting ASYCUDA projects in the country, ASYCUDA Regional Support Centres and Centres of Excellence which would significantly reduce costs.

The following table contains a sample cost plan for a medium sized implementation focussing on implementation.

Activity	Outcomes	Cost type (calculated at UN rates)
1. **Project preparation, functional requirements and stakeholder support** • Stakeholder awareness raising workshop • Initial stakeholder consultation • High level project implementation plan • Launching workshop	• Launching workshop • High level project document • Stakeholder support and project start	return airfare and DSA for ASYCUDA and CITES staff 2 week on site (ASYCUDA)
2. **Rollout and implementation** a) Business Process Analysis (*as-is* and *to-be*) b) ICT installation, customisation, piloting, integration, rollout and associated technical training of the national team c) Training of the Management Authority, Customs and traders	• Process and workflow description • Agreement on new procedures and workflows • ICT implementation • Pilot completed • Local experts trained	Length of period very much depends on specific conditions/environment a) Travel and 1 month staff DSA b) Travel and 1-2 months' staff DSA , c) Travel and 1.5 - 2.5 months' staff DSA on site
3. **Utilization and annual report preparation:** Dedicated technical assistance and support		1-2 weeks' staff DSA on site
4. **Post-implementation:** remote technical assistance and support		No cost associated (free of charge)

Duration and cost of the project

The initial rollout and support of the project, including installation, customisation in the national language/environment, configuration and training of end-users) should take between 6 months to one year. Based on the above, the cost of a standard eCITES project is estimated at around 200,000 USD for a medium sized country.

Annex

Annex 1Strategy for migration from paper permits to electronic permits

There are many aspects that need to be considered when switching from paper documents to electronic documents. We provide here a short discussion of important aspects of paperless trade from a CITES perspective.

Use of trade documents in international trade

Paper based trade documents have been in use for thousands of years in international trade. Traders, Government officials and the legal and regulatory systems have long established methods and accepted business practice to authenticate, approve, transfer, process and archive paper documents.

Globalization of trade, the increased trade volumes and the need for better control of global trade requires new solutions to exchange and process trade information. Increasingly business processes are simplified and automated and information is exchanged and processed with support of automated systems. Therefore governments and trade are now looking for ways to move from exchange of paper documents towards exchange of information through electronic documents[25].

Definition: An electronic **document** is a digital record were the information is stored in a structured format and can be retrieved in a structured format.

A CITES electronic permit is an example of such an electronic document because an application can retrieve, for example, the "Name and Address of the exporter" in the Permit. Contrary, a photocopy, fax or the scan of a CITES permit is not an electronic document but rather an "electronic image" of the paper permit.

Information exchange through electronic trade documents is a relative new instrument in international trade. Today, the standards for electronic document exchange through are already fairly advanced and globally accepted. Recommendations and guidance on the use of electronic documents are provided by UNECE and WCO and, in the case of CITES permits, through the CITES ePermitting standard.

On the contrary, few globally accepted standards are available on legal aspects of electronic document exchange in particular on electronic signatures, authentication and non-repudiation of electronic documents in a cross border context. Therefore projects implementing electronic trade documents need to look for technical solutions and work flows that are acceptable with prevailing business practice and the legislation. For the change from paper to electronic permits this means that electronic documents cannot completely replace paper documents. Rather there will always be areas of the supply chain were only paper documents can be used.

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[25] Alternative terms often used are « paperless trade » and « dematerialization of trade documents »

This leads to the implementation of **dual systems** were information is exchanged in electronic format between some stakeholders while at the same time the paper document continues to be used by those parties that are not ready to use the electronic documents. The transition from paper to electronic documents becomes a stepwise process were electronic documents gradually support more and more business processes stakeholders while the paper document is gradually phased out.

A recommended strategy for migrating towards use electronic CITES permits

The CITES convention includes a high level description of the workflow of the document both in the national and international level:

- National workflow: the permit is issued by the Management Authority and later endorsed by Customs. There requires update and authentication of the permit.
- International workflow: The convention describes responsibilities parties in the importing and exporting countries when processing the permits.

The present paper based workflow implies that there is a "paper original" of the permit and that the workflow is reflected by amendments made by Customs on the paper permit.

This has important implications when electronic documents are used in a dual system: Parties have to agree whether the paper or the electronic document is considered as the "original" otherwise the paper and the electronic permit could be used for two distinct transactions. The issue is further complicated by the fact that it is very simple to create a large number of electronic permits by copying the electronic file.

Different approaches to this problem exist. One obvious approach would be that both importing and exporting country agree that only the electronic permit is considered to be the original. This is the objective of the current Electronic Permit Information Exchange (EPIX) work stream. As EPIX requires extensive legal and technical arrangements this solution is only feasible for countries with very advanced and established eBusiness environments.

For countries that approach electronic CITES permits we recommend instead to commence with a simplified approach using a *dual paper and electronic CITES permitting system* were stakeholders gradually move from use of CITES paper permits to electronic CITES permits.

The Management Authority stores all permits in a central, trusted database which allows remote access, for example through the Internet. This database will also store information whether the (paper or electronic) permit has been used for an export or import transaction.

Copies of the permit can be used by the stakeholders. If there is doubt on the validity of a permit the stakeholder can access the central database and compare the paper or electronic copy with the data in the trusted database of the Management Authority.

A strategy for migration from paper to electronic permits

The recommended strategy for the introduction of electronic CITES permits is to

- Implement a dual system using paper and electronic CITES permits. The paper permit is considered as the "original". The use of the electronic permits for the business processes is implemented in a stepwise approach. In each step a new group of stakeholders switches from paper permit to electronic permit.
- The long-time objective is to base all business processes on the electronic CITES permit.
- The electronic CITES permit is stored within a controlled and safe environment. We suggest that the original and trusted record is kept in a database of the CITES Management Agency. This certificate is considered as "trusted".
- Authorized users such as Customs and foreign Management Agencies can consult this database to retrieve the electronic certificate.
- Parties shall make every effort to keep status of paper and electronic document synchronised, i.e. updates on the paper document are also reflected on the electronic permit in the trusted database.

This strategy allows for a phased implementation were stakeholders can adopt electronic permits based on their individual technical, legal and institutional readiness.

A typical scenario for use of electronic CITES permits in a dual system would look as follows:

Example: An exporter has made an electronic request for a CITES permit. The Management Authority inspects the consignment and issues a paper and electronic CITES permit. The CITES permit is identified by a unique key (permit/certificate number). All data is recorded in the database of the Management Authority.

The exporter submits the electronic CITES permit as supporting document together with the Customs declaration to Customs. If Customs sees a need to validate the integrity of the permit, for example to check whether the permit is still valid, the Customs officer can log into the database of the Management Authority and compare the original data in the database with the data presented by the trader.

One variant of this approach is that the exporter does not at all submit the electronic permit. Rather the exporter provides Customs with the permit number. If the Customs officer or the Customs IT system needs access to the electronic permit they will download the (trusted and original data) from the database of the Management Authority.

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While such a dual system may appear complicated to implement it is actually an easy and straight forward approach to migrate to electronic documents. The same approach has been successfully used in many other areas of international trade. For example there are currently several international projects to introduce electronic Sanitary Certificates (eSPS) for agriculture trade. Most of these projects[26] adopt an dual paper and electronic SPS approach with a gradual out-phasing of the paper permit which is equivalent to the approach recommended in this paper for CITES electronic Permits.

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[26] Reference is made to implementation of eCERT in Australia and New Zealand and electronic exchange with USA and ongoing projects for SPS exchange between Philippines and Australia and Philippines and Netherlands.