HccH
HAGUE CONFERENCE ON
PRIVATE INTERNATIONAL LAW
CONFÉRENCE DE LA HAYE
DE DROIT INTERNATIONAL PRIVÉ

LE PROGRAMME PILOTE D'APOSTILLES ÉLECTRONIQUES DE LA HCCH ET DE LA NNA

Document établi par Christophe Bernasconi, Premier secrétaire

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THE E-APOSTILLE PILOT PROGRAM OF THE HCCH AND THE NNA

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CLOSER AND CLOSER TO REALITY:
THE E-APOSTILLE PILOT PROGRAM OF THE HCCH AND THE NNA

EXECUTIVE SUMMARY:

The purpose of the *e-Apostille Pilot Program* (e-APP) is to actively support the development, implementation and promotion of effective, low-cost and secure models for the issuance and use of electronic Apostilles (e-Apostilles) and the operation of electronic Registers of Apostilles (e-Registers). The e-APP is designed to illustrate how the Conclusions and Recommendations of the *2003 Special Commission meeting on the practical operation of the Hague Apostille Convention* and the *2005 International Forum on e-Notarization and e-Apostilles* can be implemented in practice by using already existing and widely used technology.[1]

The e-APP has two main components:

1. The first component of the e-APP consists of developing a model for Competent Authorities to issue *e-Apostilles.* The suggested model will use Adobe® Acrobat®, out-of-the-box, PDF technology. While the e-Apostille will be a PDF document, it will be supported by an optional XML layer of data, which could be reused with other electronic document solutions. The use of XML will also favour the future development of a common data standard for e-Apostilles. Under the suggested model, and with a view to providing, in particular, integrity, authentication and non-repudiation, Competent Authorities will be using digital certificates to digitally sign the e-Apostilles they are issuing.

2. The second component of the e-APP consists of developing a model for an *e-Register* that could be operated by Competent Authorities to record the Apostilles they have issued. The suggested model will be designed so as to allow an interested person to conduct a secure online query by using the number and date of the Apostille; the query will be answered automatically by indicating whether or not there is matching entry in the e-Register. The model for e-Registers will also rely on open source solutions, including PHP and MySQL. The source code for the suggested model for the e-Register and the database model will be made available to all parties and will be freely licensed under the GNU General Public License.

For both components of the e-APP, *educational material*, including printed material and an online educational program, explaining the operation and use of the suggested models will be developed and freely licensed under a Creative Common License.

As a result of the adopted license structure, Competent Authorities will be able to use the suggested models and educational materials *for free*.

The e-APP is neither intended nor designed to favour one specific technology over another; the basic purpose of the e-APP is to inform and educate interested Competent Authorities, other State officials and relying parties (end-users) about the potential benefits of e-Apostilles and e-Registers and the availability of affordable, widely used and

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[1] The Conclusions and Recommendations of the 2003 Special Commission are available on the *Apostille Section* of the HCCH website at < www.hcch.net >. The Conclusions and Recommendations of the Forum on e-Notarization and e-Apostilles are available on both the *Apostille Section* of the HCCH website and the NNA website at < www.nationalnotary.org >. The Special Commission and the Forum had, among other things, concluded that "*the spirit and letter of the Apostille Convention do not constitute an obstacle to the usage of modern technology*" and that "*the Convention's application and operation can be further improved by relying on such technologies*". As a result, both the Special Commission and the Forum encouraged the development and application of e-Apostilles and e-Registers.

secure technology that allows for the easy, straightforward practical implementation and operation of e-Apostilles and e-Registers.

The e-APP will be technically administered and facilitated by the Permanent Bureau of the Hague Conference on Private International Law (HCCH) and the National Notary Association of the United States of America (NNA). The e-APP will be officially launched at the *2006 Special Commission on General Affairs and Policy of the HCCH*, to be held from 3-5 April. The Program stretches over a period of *four years*. The ultimate – and ambitious – goal of the e-APP is that, at the end of the fourth year, (i) Competent Authorities of the majority of States that are party to the Apostille Convention will be issuing e-Apostilles and / or operating e-Registers of Apostilles; and (ii) the majority of States that are party to the Apostille Convention will be accepting e-Apostilles (number of States Parties in February 2006: 87).

I.   INTRODUCTION AND BACKGROUND

A.   The Apostille Convention in a Nutshell

1.   The *Convention of 5 October 1961 Abolishing the Requirement of Legalisation for Foreign Public Documents (Apostille Convention)* is one of the most successful Conventions adopted under the auspices of the Hague Conference on Private International Law (HCCH). Of all the Hague Conventions, it has attracted the highest number of States Parties (currently 87) and it is being applied thousands of times every single (working) day. The Convention facilitates the circulation of public documents that emanate from one State Party to the Convention and need to be produced in another State Party. It does so by replacing the cumbersome and frequently costly, slow and thus inefficient formalities of a full legalisation process by the mere issuance of an Apostille (also called "Apostille Certificate"). The Convention only applies as between States Parties. Apostilles may only be issued by a Competent Authority designated by the State from which the public document emanates.[2]
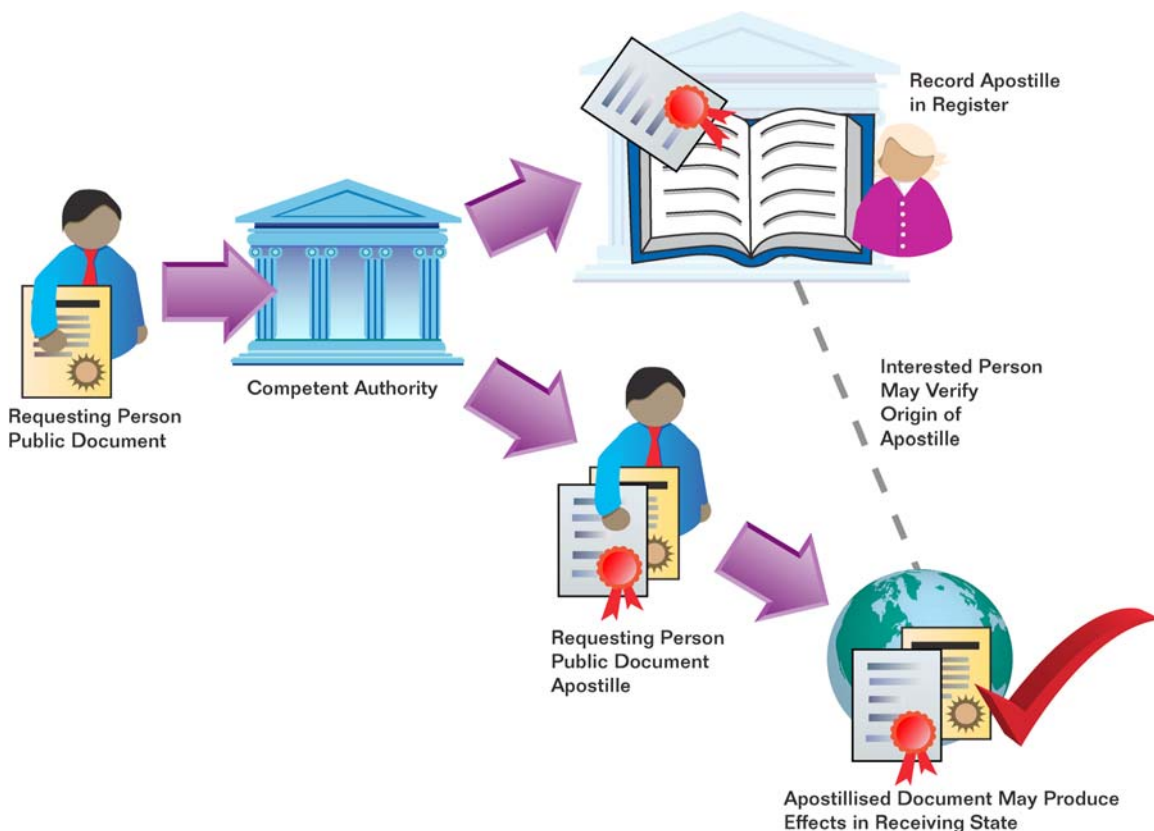
B.   The use of information technology and its impact on the practical operation of the Apostille Convention (the 2003 Special Commission and 2005 Forum)

2.   The practical operation of the Apostille Convention was most recently reviewed during a Special Commission meeting held in 2003. The Special Commission confirmed the *"very wide use and effectiveness"* of the Convention, as well as the "absence of any

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[2]   For more information on the Apostille Convention (such as the full text of the Convention, a short outline explaining the operation of the Convention, the full status table, Explanatory Report, details of the Competent Authorities that issue Apostilles, and other practical information), see the *Apostille Section* of the Hague Conference's website at < www.hcch.net >.

major practical obstacle". Nonetheless, the Special Commission "emphasised that the *use of information technology (IT) could have a positive impact on the operation of the Convention*, in particular through lowering costs and increasing the efficiency of the creation and registration of Apostilles." The Special Commission "underlined that modern technologies are an integral part of today's society and their usage a matter of fact."

> Most importantly, the Special Commission "noted that the spirit and letter of the Conventions [*i.e.*, the Apostille, Evidence and Service Conventions] do not constitute an obstacle to the usage of modern technology and that their application and operation can be further improved by relying on such technologies."

3.   The operation of an electronic Register of Apostilles was specifically identified as one of the stages in the issuance of an Apostille "in respect of which the application of IT might be considered and [the Special Commission] thought that there was no reason in principle – as far as the use of IT proves to be cost-efficient – why IT should not be applied". As regards the issuance of e-Apostilles in particular, the Special Commission "recommended that States party and the Permanent Bureau should work towards the development of techniques for the generation of electronic Apostilles taking into account *inter alia* the UNCITRAL Model Laws on Electronic Commerce and on Electronic Signatures, both being based on the principles of non-discrimination and functional equivalence."[3]

4.   The possibilities of using IT in the context of the Apostille Convention were also discussed and examined during the *First International Forum on e-Notarization and e-Apostilles*, which was held in May 2005.[4] The Forum echoed the findings of the 2003 Special Commission and, in particular, endorsed the conclusion that the spirit and letter of the Apostille Convention do not constitute an obstacle to the use of IT.

> The Forum encouraged States and their Competent Authorities "to further explore the possibilities of setting up electronic Apostille registers. The general consensus was that this goal was easily attainable using commonly available technologies." The Forum further concluded that "electronic registers would promote and facilitate usage of registers, which are now hardly ever used in a purely paper form environment; thus electronic registers may provide a powerful deterrent to fraud and abuse of the Apostille." The Forum stressed that such registers should be made available online.

5.   The Forum encouraged Competent Authorities to issue e-Apostilles for public documents submitted either in paper or electronic form. The participants stressed, however, that e-Apostilles "need to fulfil certain basic requirements to ensure non-repudiation"; in particular, "the fact of the issuance of the Apostille by the Competent Authority must be independently verifiable" and the Apostille "must be invalidated if the

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[3]   See the *Conclusions and Recommendations adopted by the Special Commission on the practical operation of the Hague Apostille, Evidence and Service Conventions (28 October to 4 November 2003)*, available on *Apostille Section* of the HCCH website at < www.hcch.net >; see in particular paragraphs 2, 4, 5, 7, 23 and 24.

[4]   This Forum was jointly organised by the HCCH and the International Union of Latin Notaries (IULN), and hosted by the National Notary Association of the United States (NNA). The Forum, which was held on 30 and 31 May 2005 in Las Vegas, was attended by more than 170 government representatives (including several from Competent Authorities designated under the Apostille Convention), experts in notarial practice, and other dignitaries and officials from 31 different States. The Conclusions and Recommendations of the Forum on e-Notarization and e-Apostilles are available on both the *Apostille Section* of the HCCH website and the NNA website at < www.nationalnotary.org >.

underlying document is improperly modified as when, for example, a person attempts to remove the Apostille from the public document." Finally, it was stressed that these requirements "do not in any way require the use of one specific technology, nor are they intended to privilege the use of one specific technology over another."

II. BASIC ELEMENTS OF THE ELECTRONIC APOSTILLE PILOT PROGRAM (e-APP)

A. Overview of the e-APP

6. It is with a view to further strengthening and actively supporting the described efforts towards the development, implementation and promotion of effective, low-cost and secure models of electronic Apostilles (e-Apostilles) and electronic Registers of Apostilles (e-Registers) that the HCCH and the NNA will be launching the electronic Apostille Pilot Program (e-APP) at the *2006 Special Commission on General Affairs and Policy of the HCCH* (to be held from 3-5 April 2006). The e-APP is designed to illustrate how the Conclusions and Recommendations of the 2003 Special Commission meeting and the 2005 International Forum on e-Notarization and e-Apostilles can be implemented in practice by relying on already existing and widely used technology.

> Under the e-APP, the HCCH and the NNA will be developing two distinct models that could be used by Competent Authorities designated under the Apostille Convention: one model to issue e–Apostilles and one model to operate e-Registers of Apostilles. The e-APP is neither intended nor designed to favour one specific technology over another, nor is it the goal of the e-APP to develop proprietary software. The e-APP's core objective merely is to demonstrate how already existing and widely used technology allows for the easy, straightforward practical implementation and operation of e-Apostilles and e-Registers. The e-APP is designed to inform and educate interested Competent Authorities, other State officials and relying parties (end-users) about the potential benefits of e-Apostilles and e-Registers and the availability of affordable and secure technology to issue e-Apostilles and operate e-Registers. For both components of the e-APP, accompanying educational material will be developed. The suggested models will be simple, effective and easy to rely upon. The technical development of both suggested models and the educational materials will be undertaken by the NNA, in close co-operation with the Permanent Bureau of the HCCH. The suggested models and educational materials will be made available *for free* to interested States and Competent Authorities. The e-APP stretches over a period of four years.

7. As part of the official launch of the e-APP at the 2006 Special Commission on General Affairs and Policy, a PowerPoint presentation will illustrate the technical aspects and envisaged practical operation of both components of the e–APP. Any Member State of the HCCH or non-Member State Party to the Apostille Convention will be invited to participate in the further development, implementation and promotion of the e-APP. Participating States will of course also be in a position to provide further indications as to the modalities of their participation in the e-APP.

8. Applying the models provided for under the e-APP will:

- render the issuance and use of Apostilles *faster and cheaper*, and thus further increase the overall efficiency of the Convention's practical operation;

- render the issuance of and reliance on Apostilles *more secure,* offering a level of security which will by far exceed the current standards resulting from the Convention's operation in a paper-only environment;

- lead to *much more frequent verification of Apostilles* as the usage of the Registers will be dramatically facilitated, thus providing another effective tool to combat fraud.

9.   In sum, the e-APP allows for the Apostille Convention to be applied *more efficiently* and to become a *more powerful tool to combat fraud*. With the e-APP, the plain but successful Apostille Convention – which was adopted in 1961 – can be firmly embedded in the 21st century and its lifespan significantly expanded.

1.   The e-Apostille component

> Under the first main component of the e-APP, the HCCH and the NNA will be developing a model that could be used by Competent Authorities to issue e-Apostilles. The suggested model will be using Adobe® Acrobat®, out-of-the-box, PDF technology. Under the suggested model, a Competent Authority will sign an e-Apostille by using a digital certificate.

➢   *Technical features – the security issue*

10.   The suggested model for the issuance of e-Apostille will involve using *Adobe® Acrobat® PDF Intelligent Documents.*[5] While the e-Apostille will be a PDF document, it will be supported by an optional XML layer of data, which could be reused with other electronic document solutions (for example, XPS, which is scheduled to be included in Microsoft Windows Vista). The use of XML will also favour the future development of a common data standard for e-Apostilles. Although not "open source" in the strict sense of the term, PDF is a ubiquitous and widely accepted electronic document format.[6] Reasons for selecting PDF for the e-APP include its robust support for digital certificates and its wide acceptance internationally. PDF is a published, open file format specification with over 2000 supporting vendors. The following features of PDF provide an important rationale for its use in the e-APP:

- PDF Intelligent Documents enable XML data integration[7]

- Adobe® Reader® is ubiquitous (500M+ distributed) on virtually every operating system

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[5]   PDF stands for Portable Document Format and is a file format developed by Adobe Systems for representing two dimensional documents in a device independent and resolution independent format. Importantly, PDF files do not encode information that is specific to the application software, hardware, or operating system used to create or view the document. This feature ensures that a valid PDF will render exactly the same regardless of its origin or destination.

[6]   PDF, for example, has been adopted as the standard for the CM/ECF (Case Management/Electronic Case Files). CM/ECF is a new case management system being implemented in the United States Federal Judiciary for all bankruptcy, district and appellate courts. CM/ECF allows courts to accept filings and provide access to filed documents over the Internet. Information about the use of PDF filings in the CM/ECF can be found online at < http://pacer.psc.uscourts.gov/cmecf/developer/bkforms/DEfaq.pdf >.

[7]   The Extensible Markup Language (XML) is a markup language. Its primary purpose is to facilitate the sharing of data across different systems (particularly systems connected via the Internet). A markup language combines text and extra information about the text. The extra information, for example about the text's structure or presentation is expressed using markup, which is intermingled with the primary text. The best-known markup language in modern use is HTML (HyperText Markup Language), one of the foundations of the World Wide Web. XML is another, newer, markup language that has gained great importance. For more information, see WIKIPEDIA.

- Open, PDF-based standards include: [8]
  - o PDF/A: ISO standard for archival documentation
  - o PDF/X: ISO standard for pre-press content exchange
  - o PDF/E: engineering documentation exchange (ISO proposed)
  - o PDF/UA: content accessible for those with visual or other disabilities (ISO proposed). [9]

11. Under the suggested model, a Competent Authority will digitally sign a PDF e-Apostille by using a *digital certificate*. To do so, a Competent Authority would first apply for a digital certificate from a Certificate Authority. [10] The Certificate Authority then issues a digital certificate containing the applicant's public key and identification information about the holder of the certificate, which can include the holder's name, email address and other information. The Certificate Authority digitally signs the holder's digital certificate with its own public key and makes this key readily available (*e.g.*, on the Internet) for third-party validation. Any recipient of an e-Apostille signed with a specific Competent Authority's digital certificate uses the Certificate Authority's public key to decode the digital certificate attached to the e-Apostille, verifies it as issued by the Certificate Authority and then obtains the sender's public key and identification information held within the certificate. Thus, the recipient of an e-Apostille will be able to assess whether the Apostille was issued by the Competent Authority in question (and not by an impostor or other fraudulent person pretending to be the said Competent Authority) and whether anyone tried to change the content of the e-Apostille or to "detach" it from the underlying public document. [11] For the purposes of the e-APP, digital certificates used by Competent Authorities must adhere to the ITU-T X.509 standard, which ensures the uniformity of the information these certificates convey. [12]

12. Obviously, the issuance of a digital certificate to a Competent Authority is an important factor in the trust that relying parties will place in the authenticity of a digitally signed e-Apostille. The goal of the e-APP is to identify those who issue individual or organisational digital certificates in a trusted manner, such that all relying parties will have a very high degree of trust in the digital certificates being used by Competent Authorities to digitally sign e-Apostilles as a part of the e-APP. The e-APP will thus include an effort to work with Competent Authorities, Certificate Authorities and any other groups and individuals interested in the e-APP to maintain a list of Certificate Authority providers who can facilitate the secure issuance of digital certificates to Competent Authorities. The goal of this list is not to exclude or otherwise favour specific Certificate Authorities. Rather, Competent Authorities will be free to identify those Certificate Authorities they will work with and to publicise this information through the e-APP for the benefit of all participants.

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[8]   More information can be found online at:
http://www.adobe.com/enterprise/standards/main.html

[9]   More information can be found online at:
http://www.aiim.org/standards.asp?ID=27861

[10]   In cryptography, a Certificate Authority is an entity that issues digital certificates for use by other parties. It is an example of a trusted third party. Certificate Authorities are characteristic of many public key infrastructure (PKI) schemes. There are many commercial Certificate Authorities that charge for their services. Institutions and governments may have their own Certificate Authorities, and there are free Certificate Authorities. For more information, see WIKIPEDIA.

[11]   For a helpful description of electronic signatures in general, see the *Guide to Enactment 2001* relating to the UNCITRAL Model Law on Electronic Signatures, p. 19-31 (available on UNCITRAL's website at < www.uncitral.org >).

[12]   For more information about the X.509 standard, see:
< http://en.wikipedia.org/wiki/X.509 >;
< http://www.ietf.org/html.charters/pkix-charter.html >;
< http://www.itu.int/ITU-T/ >.

13.   Thus, the use of digital certificates will provide, in particular, integrity (assurance that the document has not been altered), authentication (assurance as to where the document comes from) and non-repudiation (Competent Authority cannot deny having signed the document).[13] This will provide a much higher degree of security and trust than with paper Apostilles (which are often simply stapled to the underlying public document and thus subject to being detached and used for other purposes).

> ### *Ease of use – educational material*

14.   The suggested model will be *simple, effective and easy to rely upon*. The practical application of the suggested model will not require sophisticated technical skills, neither from the Competent Authority issuing an e-Apostille nor from the person who requested it nor from the ultimate authority, official or other person who is being presented with the apostillised public document. Ease of use will be further enhanced by *educational material*, which the HCCH and the NNA will develop and update as necessary. This educational material will include printed documentation and an online educational program, which will be freely licensed under a Creative Common License[14] and accessible via the HCCH's and the NNA's website. This educational material will also include information about X.509 digital certificates and Certificate Authorities that issue these certificates in a trustworthy manner. It is hoped that participating States, Competent Authorities, organisations and individuals will suggest contributions to this educational material to make it more valuable to all the participants.

15.   The suggested model may be used to issue e-Apostilles in relation to public documents which have been executed in *paper* form but which (the Competent Authority) then scanned into electronic form and saved, for example, as a PDF electronic document; in addition, under the suggested model, an e-Apostille could also be attached to a public document that has been executed in *electronic* form, such as an electronically notarised PDF public document. Under the suggested model, the relevant Competent Authority would send the e-Apostille, which would be "wrapped" around the electronic public document, by email to the person who requested it. Alternative delivery processes may be developed and are encouraged. For example, the Competent Authority may elect to develop and maintain a secure website from which the person who requested the e-Apostille may download the e-Apostille after authenticating to the website via the use of a username / password (or similar model). That person may then forward the e-Apostille by email to the ultimate recipient of the apostillised public document.

16.   Finally, participating Competent Authorities may issue e-Apostilles for some public documents while they continue issuing paper Apostilles for others.

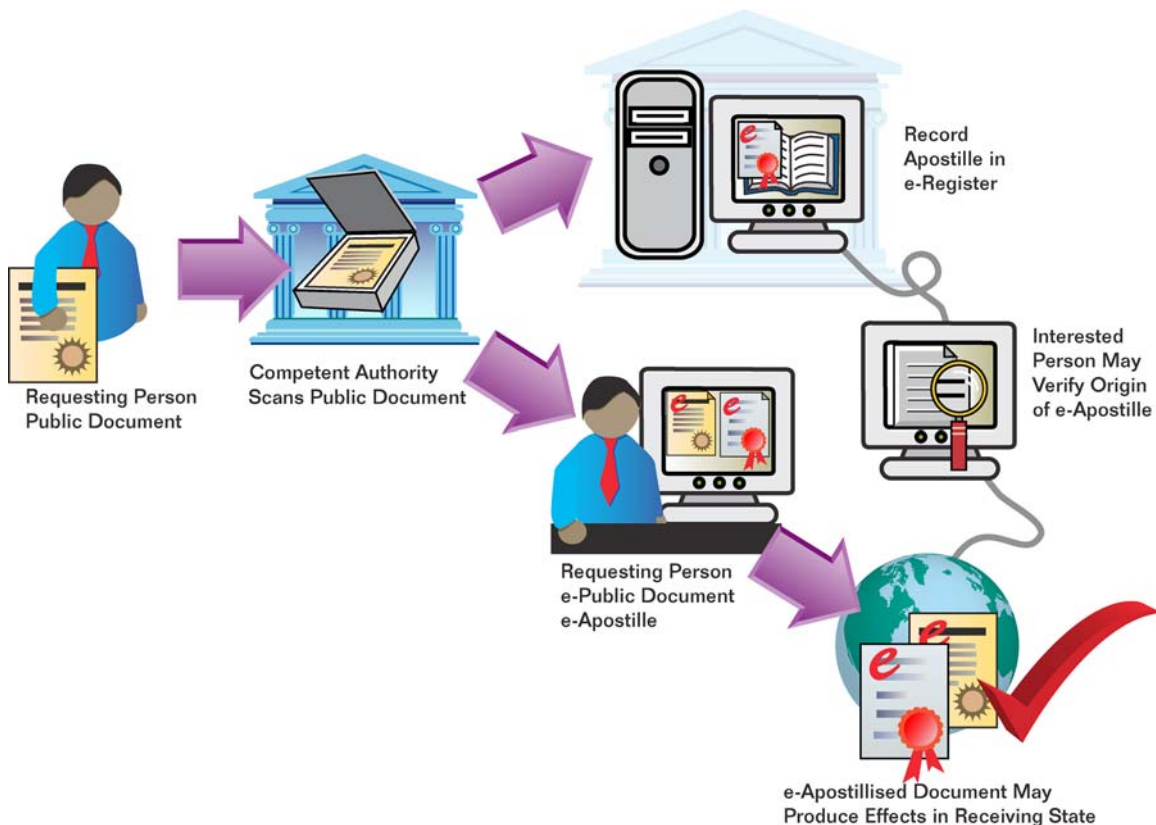[13]   See < http://www.adobe.com/security/pdfs/acrobat_security_wp.pdf >.

[14]   The Creative Common License refers to the name of several copyright licenses. These licenses all grant certain baseline rights, such as the right to distribute the copyrighted work on file sharing networks. The rest of the license is comprised of a combination of four conditions: (1) *Attribution (by)*: Permit others to copy, distribute, display and perform the work and derivative works based upon it only if they give the licensor credit; (2) *Non-Commercial (nc)*: Permit others to copy, distribute, display and perform the work and derivative works based upon it only for non-commercial purposes; (3) *No Derivative Works* or *NoDerivs (nd)*: Permit others to copy, distribute, display and perform only verbatim copies of the work, not derivative works based upon it; (4) *ShareAlike (sa)*: Permit others to distribute derivative works only under a license identical to the license that governs your work. Mixing and matching these conditions produces sixteen possible combinations, of which eleven are valid Creative Common Licenses. Of the five invalid combinations, four include both the "nd" and "sa" clauses, which are mutually exclusive; and one includes none of the clauses, which is equivalent to releasing one's work into the public domain. For more information, see WIKIPEDIA and < http://creativecommons.org >.

> ### *A low-cost solution*

17. The suggested model for the issuance and use of e-Apostilles and the educational material will be made available free of charge to interested States and Competent Authorities.

18. The suggested model will require *minimal investment to participate*. Digital certificates compatible with Adobe® Acrobat® PDF and a licensed version of Adobe® Acrobat® Standard or Professional (6.0 or later) would be the only required expenditures for participating Competent Authorities. The cost of digital certificates can vary widely, and Competent Authorities should work to identify a provider whose price and issuance process are acceptable to them. Although PDF documents that have been digitally signed may be viewed freely in Acrobat® Reader®, the ability to create and digitally sign a PDF document requires a licensed copy of Adobe® Acrobat® Standard or Professional.[15] The only required additional expenditures would be appropriate hardware and technical staff resources to produce and manage electronic documents and e-Apostilles.

19. The use of PDF technology, then, provides a cost-effective means for Competent Authorities to issue and manage e-Apostilles. PDF technology does not require a burdensome investment in additional hardware or software, and the requesting party need only rely upon the free Adobe® Acrobat® Reader® to participate.

Requesting Person Public Document

Competent Authority Scans Public Document

Record Apostille in e-Register

Interested Person May Verify Origin of e-Apostille

Requesting Person e-Public Document e-Apostille

e-Apostillised Document May Produce Effects in Receiving State

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[15] Standard and Professional versions of Adobe® Acrobat® provide different types of functionality. A Competent Authority's decision to rely on one or the other version will be a matter of discretion and desired functionality.

2.   The e-Register component

> Under the second main component of the e-APP, the HCCH and the NNA will be developing a software model that could be used by Competent Authorities to operate e-Registers in which they could record the Apostilles issued and which any interested person, who is being presented with an Apostille, could access online to verify the authenticity of the Apostille. This model will also rely on open-source solutions, including PHP and MySQL.[16]

20.   It is a well established fact that the Registers, which Competent Authorities must keep according to Article 7 of the Convention, are hardly ever used in practice. This is surprising as the drafters of the Convention had envisaged the Registers to be an essential tool to combat fraud and assess the origin of an Apostille in case of doubt. The suggested model for e-Registers is designed to dramatically facilitate access to and consultation of the Registers. It is suggested that an electronic Register is easier to install and operate than a paper-based Register (or card index, see Art. 7). This in turn should be a strong incentive for those Competent Authorities which do not yet have a Register to actually start operating one.

➤   *Technical features – the security issue*

21.   The e-APP will develop a software model relying upon PHP[17] and MySQL[18] languages in order to facilitate a broader acceptance and easier implementation of e-Registers. Competent Authorities who desire to implement an e-Register may ultimately choose to develop an e-Register software model that does not rely upon open source solutions. Ultimately, the goal of the e-APP is not to dictate a particular or preferred software

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[16]   Open source software is largely understood as software for which the source code is freely available for study, improvement, and redesign. Although open source software can be the basis of marketable software products, the source code is typically licensed so that it remains freely available. Advocates of open source software tend to believe that software designed under the open source model can promote greater innovation, enhance security, and foster the development of more cost-efficient software solutions, among many other potential benefits. For more information, see WIKIPEDIA.

[17]   PHP is a programming language used to create websites. Short for "**P**HP: **H**ypertext **P**reprocessor", it is an open source, reflective programming language used mainly for developing server-side applications and dynamic web content, and more recently, a broader range of software applications. PHP allows interaction with a large number of relational database management systems, such as MySQL (and many others).

[18]   MySQL is a multithreaded, multi-user, SQL (Structured Query Language) Database Management System (DBMS) with an estimated six million installations. MySQL is owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, which holds the copyright to most of the codebase. The company develops and maintains the system, selling support and service contracts, as well as proprietary-licensed copies of MySQL, and employing people all over the world who collaborate via the Internet. MySQL AB, however, also makes MySQL available as *free software* under the GNU General Public License (GPL). Its popularity as a web application is closely tied to the popularity of PHP, which is often combined with MySQL and nicknamed the *Dynamic Duo*. MySQL works on many different platforms—including AIX, BSDi, FreeBSD, HP-UX, GNU/Linux, Mac OS X, NetBSD, Novell NetWare, OpenBSD, OS/2 Warp, QNX, SGI IRIX, Solaris, SunOS, SCO OpenServer, SCO UnixWare, Tru64, Windows 95, Windows 98, Windows NT, Windows 2000, Windows XP and more recent versions of Windows. Prominent users of MySQL include Yahoo! for some data management functions, Cox Communications (which is the fourth largest cable television provider in the United States and which has more than 3,600 tables and two billion rows of data in their databases and handles approximately four million inserts every two hours), Sabre and its travel reservation system Travelocity, Amazon.com for many in-house projects, and WIKIPEDIA which is accessed more than 200 million times per day and is updated more than 1.2 million times per day with peak loads of 11,000 queries per second. Information taken from WIKIPEDIA.

model, but to encourage the development of e-Registers that allow for easy but secure online queries with automated replies; this should encourage greater use of the Registers as a public convenience and a deterrent to forgery and fraud.

22.   The PHP software model will present a simple yet effective online e-Register that Competent Authorities can adopt and adapt at will. The use of PHP will require, at minimum, secure web servers managed and maintained by the Competent Authority or provided to the Competent Authority by an outsource vendor. Though it will be Competent Authority's responsibility to manage the day-to-day operation of the e-Register, it is the goal of the e-APP to provide an open source code base that will facilitate more rapid development, greater security, and overall improved IT management.

23.   The MySQL database model will present a simple yet highly scalable database for the creation, storage, and long-term maintenance of e-Register entries. As with the PHP software model for the online e-Register, the use of MySQL will require, at minimum, secure database servers managed and maintained by the Competent Authority or provided to the Competent Authority by an outsource vendor.

24.   The software model developed in PHP will be protected by the GNU General Public License.[19] The use of this license does not in any way restrict a Competent Authority, either in terms of price (the software model will be freely distributed) or ability to modify the source code. On the contrary, the use of the General Public License will ensure that this code will always remain free to interested adopters, that adopters can freely modify the source code to develop their own applications, and that adopters will always have access to the source code.

25.   The issue of how best to protect and secure the information stored in an e-Register is a sometimes complex, sometimes simple issue that IT professionals wrestle with daily. To effectively and safely implement an e-Register, Competent Authorities should turn to experts in-house or provided by an IT vendor. Although the e-Register is, by design, simple to use and maintain, the records in the e-Register can contain sensitive data that should not be compromised. The e-APP will not provide expert guidance on the best ways to implement effective security for the e-Register and the data it provides access to, but the e-APP will work to share information between parties on this issue if it becomes important to participants to do so.

➢ *Ease of use – educational material*

26.   The suggested model will be equally *simple, effective and easy to rely upon*. The registration of an e-Apostille in an e-Register and access to an e-Register will not require sophisticated technical skills. Ease of use will be further enhanced by educational material, which the HCCH and the NNA will be developing. This educational material will include *printed documentation* and an *on-line educational program*, which will be accessible via the HCCH's and the NNA's website.

27.   The use of open source technology for the e-Register should aid and encourage participants from all corners of the globe to join this innovative program. Although Competent Authorities will remain free to develop and implement their own e-Registers using technology that is not open source, it is the hope of the e-APP that open source

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[19]   The GNU General Public License (GNU GPL or simply GPL) is the most popular free software license (GNU is a free software operating system; its name is a recursive acronym for "**G**NU's **N**ot **U**nix", which was chosen because its design is Unix-like, but it contains no actual UNIX code). The GPL grants the recipients of a computer program the following rights, or "freedoms": the freedom to run the program, for any purpose; the freedom to study how the program works, and modify it (access to the source code is a precondition for this); the freedom to redistribute copies; the freedom to improve the program, and release the improvements to the public (access to the source code is a precondition for this). For more information about the GNU General Public License, see WIKIPEDIA and < http://www.gnu.org/licenses/gpl.html >.

technology will initially provide an important impetus to reach the goals defined in this document. Even for those participants who choose not to rely upon an open source solution for their e-Register, the workflow described below and modelled in the freely distributed solution should provide an important head start to those working with other software development solutions.

28.   The model will be designed so that in order to query an e-Register online and verify whether there is an entry corresponding to a given Apostille, an interested person should enter at least the number and date of the Apostille appearing on the Apostille Certificate that was presented to this person. The suggested model thus will not allow for fishing expeditions whereby a person could access the Register without restraint and obtain information as to any specificity of the Apostilles issued by the relevant Competent Authority. The suggested e-Register will be designed so that online queries will be answered automatically by indicating whether or not there is a matching entry in the e-Register. Finally, the e-Register will be designed so as to allow for continued access to records over a long period of time.
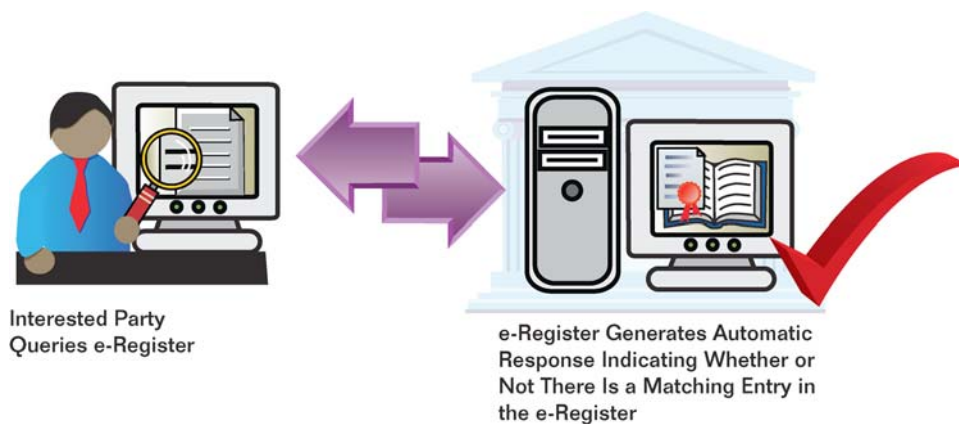
> ### *A low-cost solution*

29.   The suggested model for the operation of e-Apostilles and the educational material will be made available free of charge to interested States and Competent Authorities.

30.   The suggested model will require *minimal investment to participate*. The use of an open source solution will provide one important cost saving to Competent Authorities; namely, avoiding the purchase of expensive software. Nevertheless, it is important for Competent Authorities to understand that the day-to-day operations of an e-Register are the same as those for any application that manages and controls access to sensitive and important data.

31.   As a result, Competent Authorities who elect to develop and manage an e-Register on their own servers using existing IT resources will need to work collaboratively with those in-house personnel to determine how best to implement and operate the e-Register over time. These kinds of costs will need to be borne by the Competent Authority.

32.   Alternatively, some Competent Authorities may elect to develop and manage an e-Register using outsourced servers and some combination of in-house and outsourced IT resources. This kind of model bears a certain cost as well, and Competent Authorities will need to determine how best to support an e-Register using this model.

33.   By relying on open source software as much as possible, it is the goal of the e-APP to provide a cost-effective means for participants to join the program. However, it is important to emphasize that the costs for managing and maintaining an operational e-Register are costs that are ultimately borne by the Competent Authority.

Interested Party
Queries e-Register

e-Register Generates Automatic
Response Indicating Whether or
Not There Is a Matching Entry in
the e-Register

B.   The time-frame of e-APP

34.   The e-APP will be launched at the *2006 Special Commission on General Affairs and Policy of the HCCH* (to be held from 3-5 April 2006). The project stretches over a period of 4 years. The main stages of the e-APP may be summarised as follows:

YEAR ONE (APRIL 2006 – APRIL 2007):

- Official launch of the project

- HCCH and NNA to develop the suggested models for e-Apostilles and e-Registers

- HCCH and NNA to develop the educational materials

- Secure the active participation of at least three States or jurisdictions to begin issuing and / or accepting e-Apostilles and / or operating e-Registers

- As a follow up to the launch in April 2006, the NNA will host an educational event for an international audience as part of its 28th Annual Conference in Washington, D.C., to be held from 27-31 May 2006. The purpose of the event, titled the *Second International Forum on e-Notarization and e-Apostilles*, is twofold: first, to provide an opportunity to discuss the e-APP with interested parties from the United States and abroad; second, to encourage active participation in the e-APP among States Parties to the Apostille Convention.

YEAR TWO (APRIL 2007 – APRIL 2008):

- Promote the e-APP internationally and secure wider active participation. The target is five to ten States or jurisdictions

- Circulation a *Questionnaire* to States piloting the system to prepare an assessment or review of the system

YEAR THREE (APRIL 2008 – APRIL 2009):

- Assess and review the project at the *Special Commission on the practical operation of the Apostille Convention*.

- Increase active participation to at least twenty States or jurisdictions.

YEAR FOUR - (APRIL 2009 – APRIL 2010):

- At the end of the fourth year, (i) Competent Authorities of *the majority of States that are party to the Apostille Convention will be issuing e-Apostilles and / or operating e-Registers of Apostilles*; and (ii) *the majority of States that are party to the Apostille Convention will be accepting e-Apostilles* (number of States Parties in February 2006: 87).

III. CONCLUSION

35.   The goals of the e-APP may seem ambitious and far-reaching, but we feel that at this time there are few remaining practical obstacles to the effective and cost-efficient implementation of technology to strengthen the important benefits of the Apostille Convention.

36.   The purpose of the e-APP, then, is relatively simple: to provide a cost-effective technology that will encourage Competent Authorities to take advantage of the benefits of secure electronic documents. As the e-APP evolves and grows, new questions will no doubt arise. Thus, the sponsors of the e-APP will strive to solicit the help and advice of all participants to answer these questions and distribute the answers.

37.   The e-APP should also provide new opportunities for Competent Authorities to serve requesting parties more efficiently and rapidly, providing more effective and efficient "e-Government" services.

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