

11th International e-APP Forum

Blockchain-based e-Register network: Korean use cases and global extension



Presented by Hyoung-Goo Kang

- Associate Professor at the Department of Finance
at Hanyang University Business School
- Head at the Business Development Center
at Hanyang University Blockchain Institute



Ministry of
Foreign Affairs

Government Innovation
for a better life

Better Government



[1] e-APP of the Republic of Korea

2016.Nov.30.

- Build 2nd Apostille system
- Online Apostille certificate issuance service
- Online e-Register service
- Advanced Apostille legacy system

2019.Jun.30.

- Applying the blockchain to consular legalization
- Cooperating with 14 commercial banks (6,400 branches)

A screenshot of the 'Apostille' online issuance form. It contains various input fields for personal and identification information, including name, date of birth, and ID number. There are also sections for selecting the type of document and the issuing authority.

[Online Issuance]

A screenshot of the 'Republic of Korea e-Apostille Service' homepage. It features a blue header with the service name and a main content area with buttons for 'Apply for apostille' and 'Verify apostille'. There is also a section for 'Apostille fee'.

[Online e-Register]

A screenshot of the 'Apostille' online e-Register service. It shows a form for registering a document for apostille, with fields for document type, date, and location. There is also a section for 'Apostille fee'.

[Legacy e-APP]

A screenshot of the 'Apostille' legacy e-APP interface. It displays a list of documents with columns for document type, date, location, and status. There are also buttons for 'Apply for apostille' and 'Verify apostille'.

A screenshot of the 'Blockchain-based Consular Legalization Service' interface. It features a blue header with the service name and a main content area with buttons for 'Apply for legalization' and 'Verify legalization'. There is also a section for 'Blockchain-based Consular Legalization Service'.

2007.Jun.29

- Join the Apostille Convention
- 1st Apostille Legacy System
- e-Register Service (x)

2018.Dec.31

- Applying the blockchain technology to legacy e-APP & e-Register



[2] Korea e-APP : Key Statistics



- # of issued certificates is exploding (CAGR = 17.44%)
- Urgent need for an efficient information system for e-APP
- 120,716 Apostilles has been issued until Sept.

year	Apostille (Total)			Online Apostille	
	Official document	Notarial deed	SUM	Official document	Ratio
2019	72,668	88,286	160,954	19,795	27.24%
2018	62,900	77,862	140,762	14,481	23.02%
2017	54,551	73,145	127,696	10,161	18.63%
2016	42,406	65,176	107,582	863	2.04%
2015	39,537	60,565	100,102	0	

Online Apostille Service for Overseas Koreans.

- Consideration 1: Official documents are written in Korean. Thus, applicants need a notary for translation.
- Consideration 2: Current online Apostille supports only nine kinds of official documents. (e.g. Family relations certificate)

[3] System Structure (e-APP & Consul system for consular)

KOREA

Korea
Financial
Telecommunications &
Clearings
Institute
Data Center
(Seoul)

Ministry of Foreign Affairs
Data Center (Seoul)

Kwangju Data Center

Embassy to Tokyo

Consulate to L.A.

e-APP

Consul System

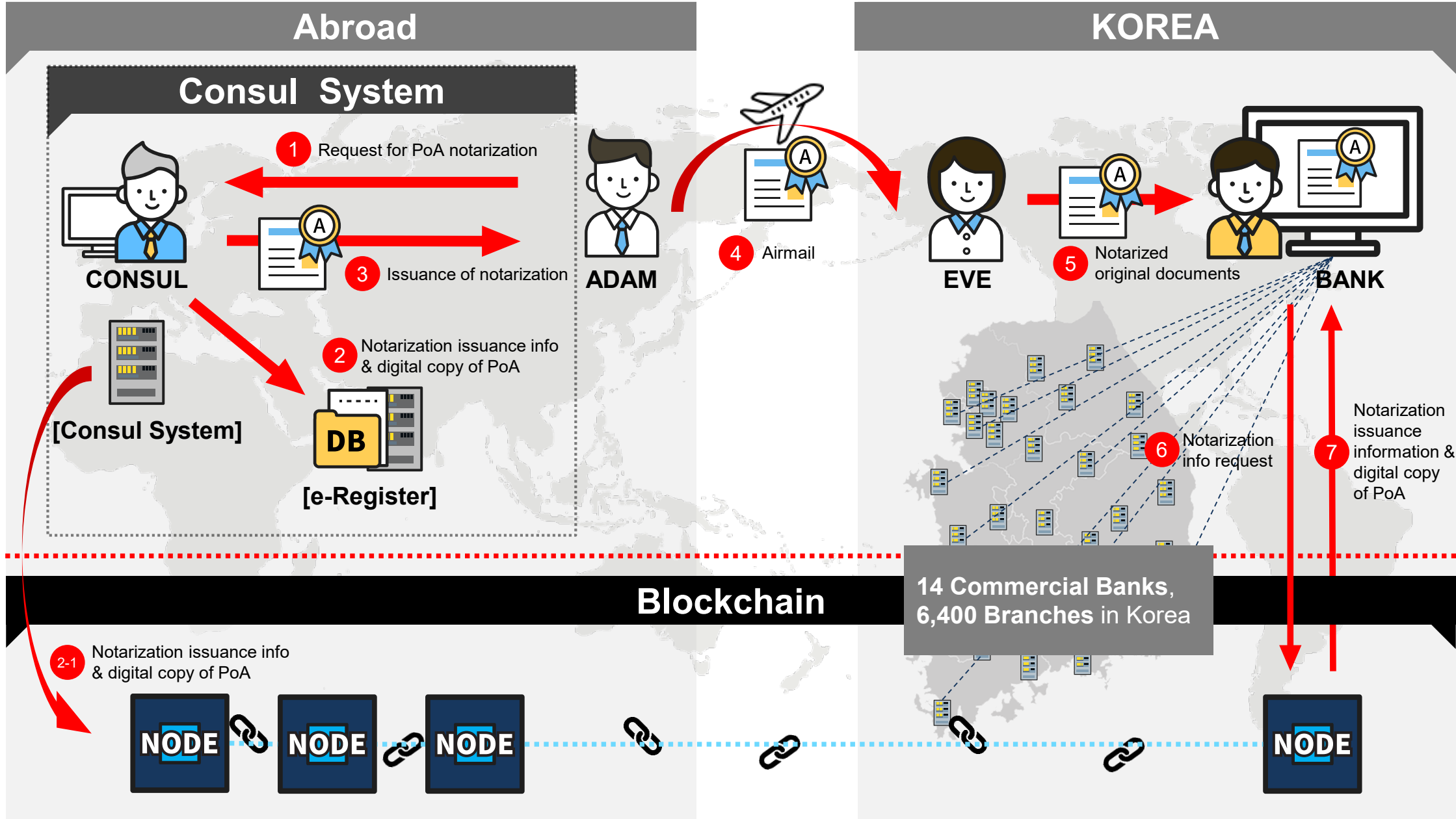
Blockchain Nodes in Worldwide

3 Sub Systems

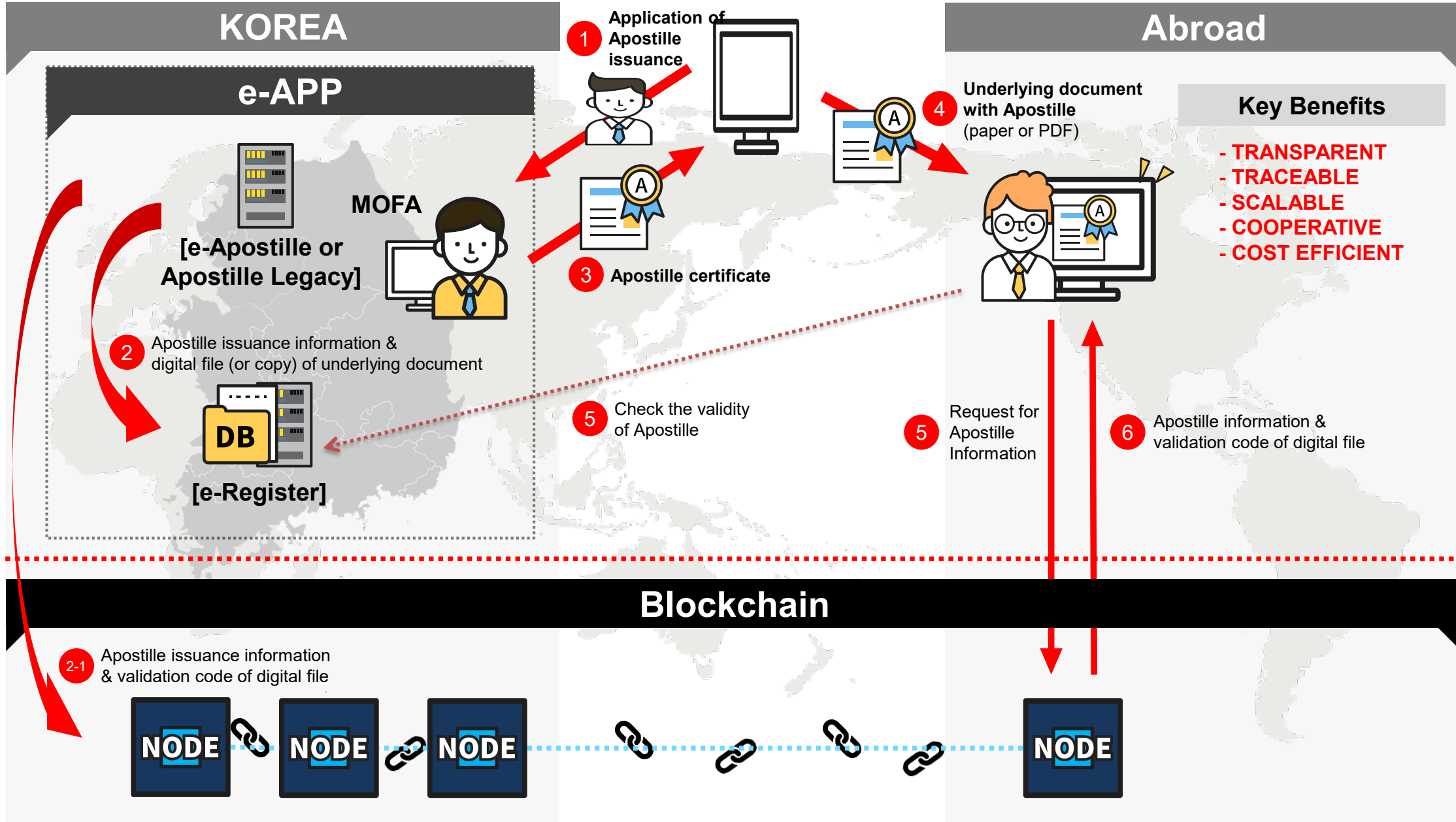
- ✓ Online Apostille
- ✓ Online e-Register
- ✓ Legacy System

- ✓ Hyperledger FABRIC 1.2 (Open Source)
- ✓ 5 Blockchain Nodes in Worldwide
- ✓ Running on Private Network

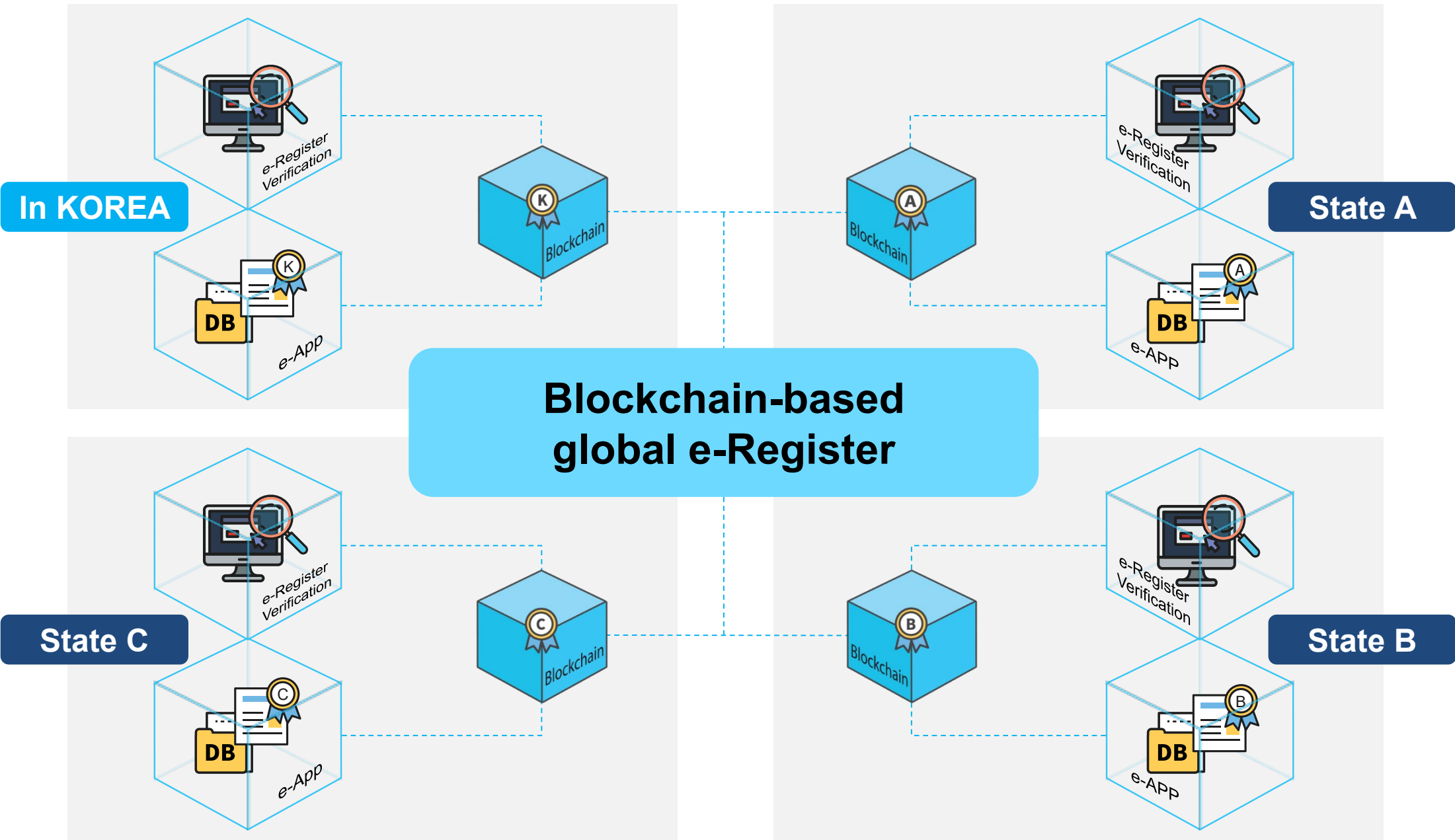
[4] Practical Case : Notarization from consul in abroad



[5] Proposal : Blockchain-based Global e-Register System



[6] How to apply Blockchain to a global e-Register System?

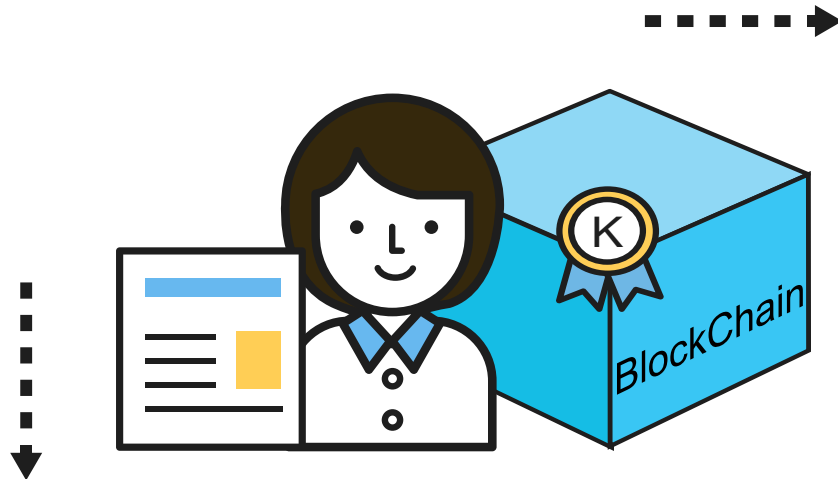


- **A blockchain-based global e-Register network is shown to work, to be scalable and to benefit contracting parties.**
- **It is cooperative, transparent, traceable, scalable and cost-efficient.**
- **Common input variables and blockchain technologies will optimize the system.**

Thank You



Appendix 1. How to Issue Apostille on Internet



Seamless e-Government



Supreme Courts

efamily.scourt.go.kr



Ministry of Justice

enotary.moj.go.kr



Ministry of Interior and Security

www.minwon.go.kr



National Police

minwon.police.go.kr

e-APP of Ministry of Foreign Affairs

Issuance Number of underlying document

Issuance Date of underlying document

Validity of underlying document
(expire date & permission)

Information of Authority

- SEAL Image
- Position of officer
- etc

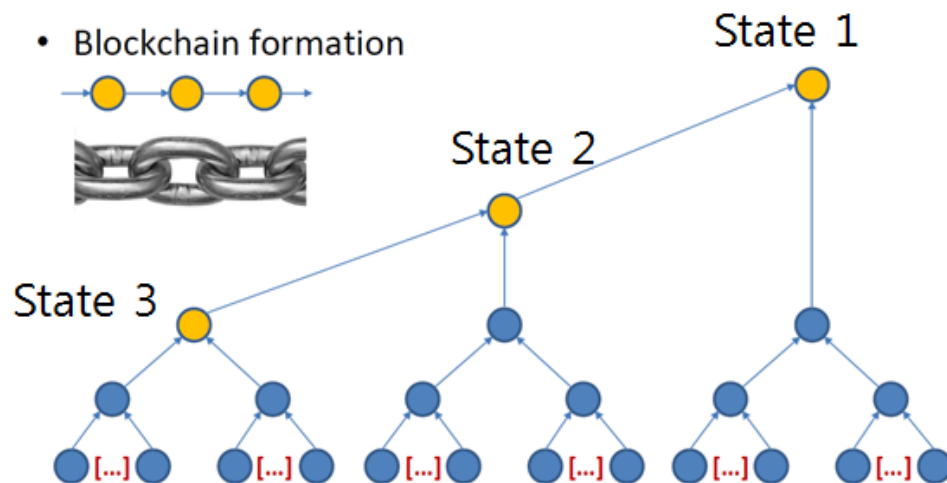
APOSTILLE (Convention de La Haye du 5 octobre 1961)			
1. Country		Republic of Korea	
This public document			
2. has been signed by			
3. acting in the capacity of			
4. bears the seal/stamp of			
Certified			
5. at	Seoul	6. the	YYYY / MON / dd
7. by	The Ministry of Foreign Affairs	8. No	XGA.2016G.2YUJUT
9. Seal/stamp	10. Signature		Kim Byoung Ho
Additional Information of Underlying Document			
Issued No : 1234567892132163465469547			
Issued Date : YYYY / MON / dd			
본 인증서 발급은 위장조작을 확인한 후 또는 보안 장치를 고장내고 있습니다. The Underlying Document has the own forgery prevention.			
본 이포스티유는 지리대부 홈페이지를 통해 발급되었습니다. 아래 사이트를 통해 인증서를 검증할 수 있습니다. This apostille was issued from Korea e-GOV Web site. To verify the issuance of apostille see under the site.			
https://www.apostille.go.kr/ Tel : +82-2-4321-0404			

Appendix 2. Blockchain Technology

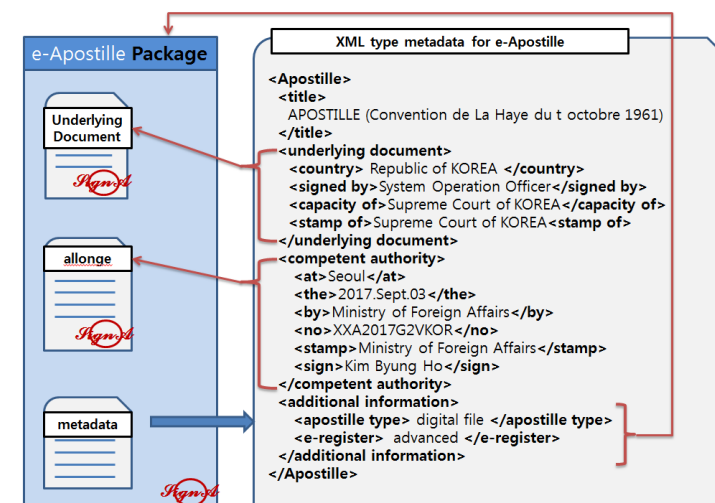
● 2016 10th International e-APP Forum C&R (Conclusion & Recommendation)

6. Participants noted with interest the developments reported and updates provided by the experts in attendance, from both Contracting Parties and the invited observers. In particular, the Forum noted with great interest the initiatives of the DONA Foundation and the InterPARES International Research Project, acknowledging the utility of harnessing the power of technologies such as the Handle System, Cloud-facilitated document preservation and Blockchain. Participants were invited to continue to study the relevance of these and other related technologies for the e-APP.

● 10th Forum - Digital Object Architecture TRUSTER Preservation Model

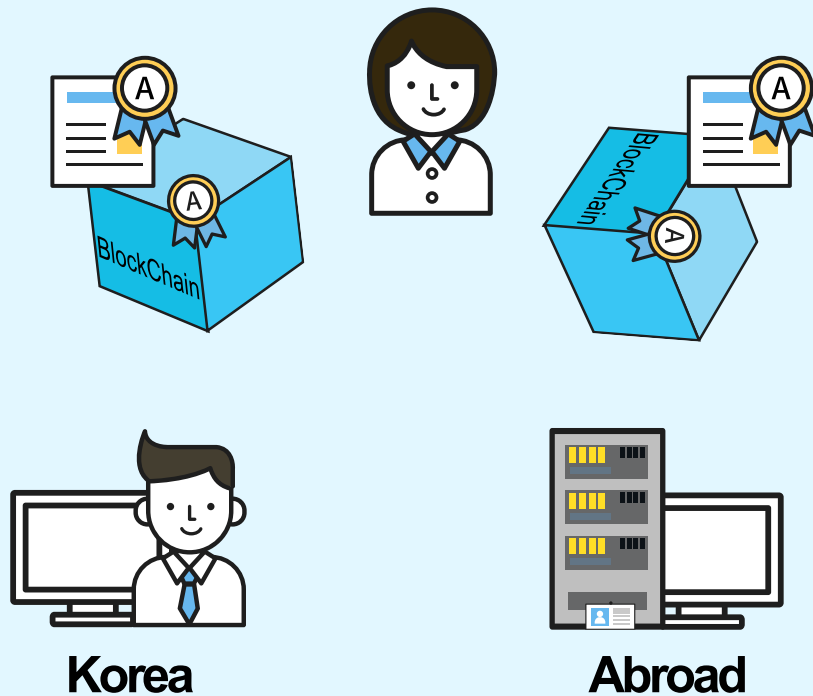


● 2017 HCCH Asia Pacific Week Template of e-Apostille

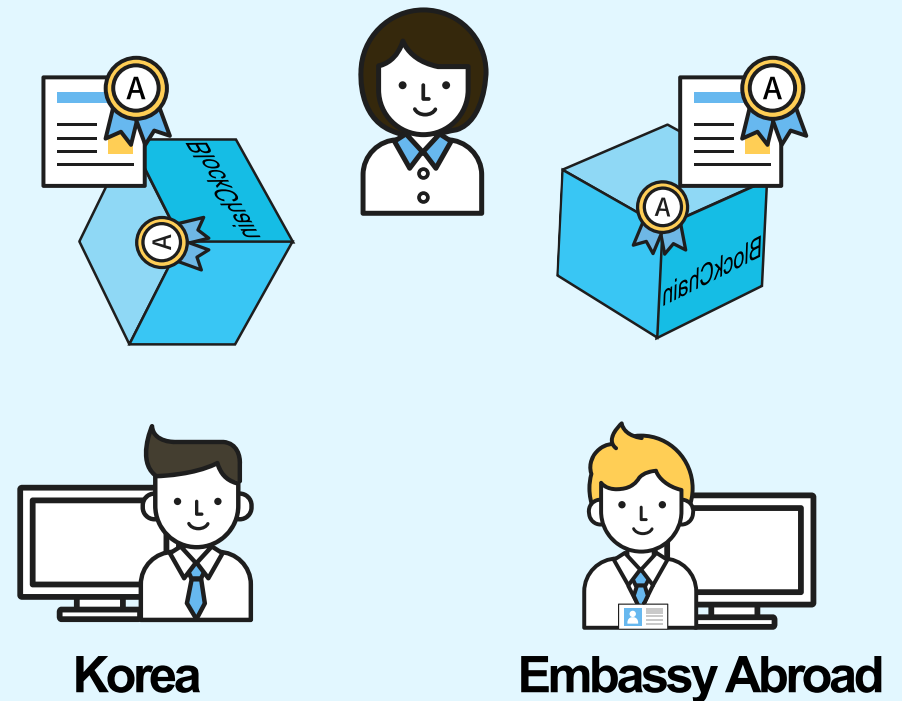


Appendix 3. Apostille Process vs Consular Notarization

Apostille From Korea



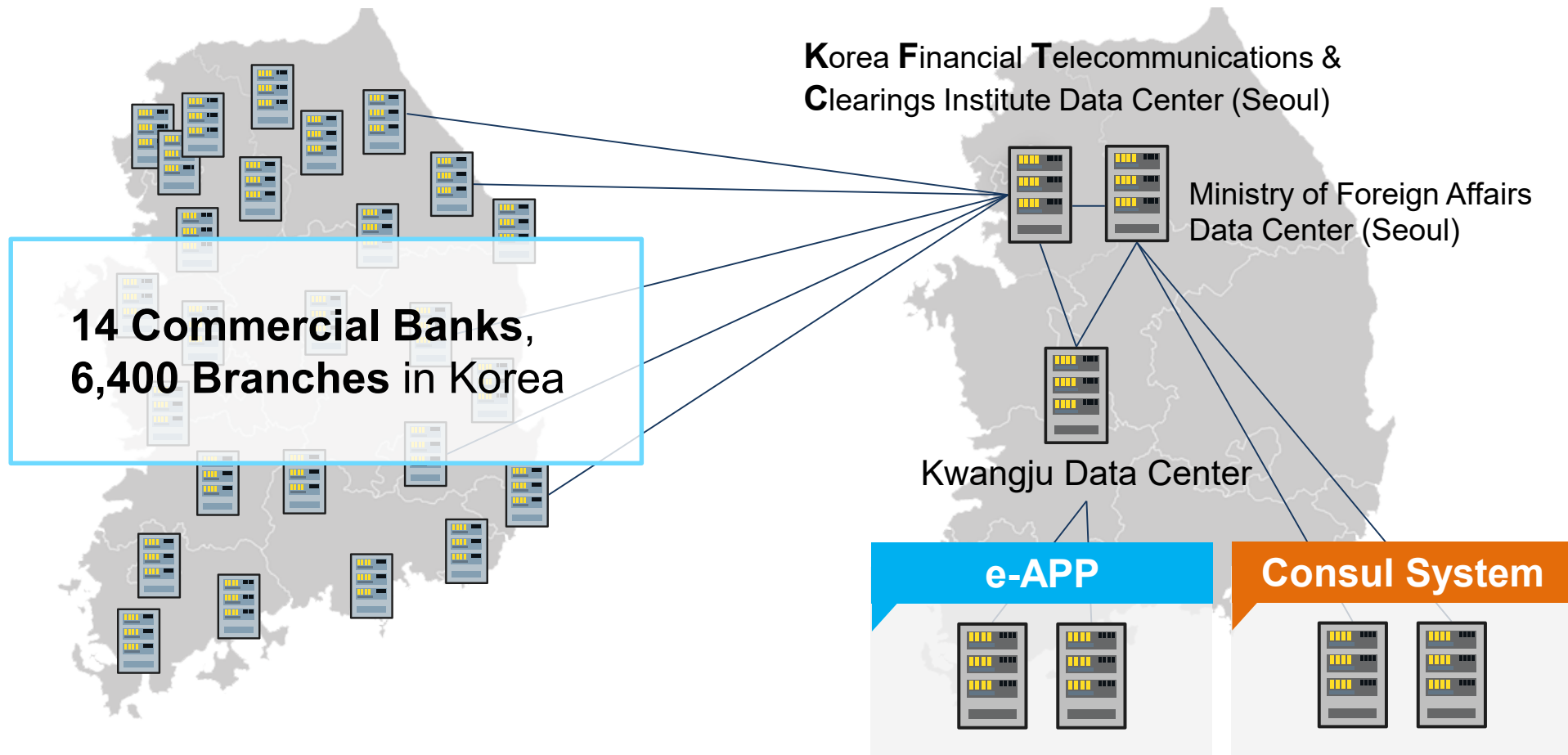
Consular Notarization From Abroad



Example

Overseas Korean nationals need power of attorney(PoA) for banking service in Korea. Notarization of PoA by Korean consul is required.

Appendix 4. System Structure (e-APP & Consol System & Banks)



Banks can check the power of attorney (PoA) notarized by consuls and see scanned PoA in their own banking system connected to the blockchain provided by KFTC (Korea Financial Telecommunications & Clearings Institute Data Center).