

# ITU/WHO Workshop on “Future of Verifiable Health Credentials Beyond COVID-19”

*Ways to Secure & Manage Verifiable Health Credentials*



# Ways to Secure & Manage Verifiable Health Credentials

## Health Credentials – COVID-19 Vaccination Certificate



### **The end of the COVID-19**

Ensure global preparedness for future pandemics and ensure appropriate digital systems and specifications are in place. More work needed on global coordination, standard, verification of health credentials .

**Korea COOV Mobile App** – After COVID, over 40M downloads, still being used for Proof of Vaccination at some traveling countries, Identification (with Passport Link), Adult Verification, or Vaccination History lookups



### **International Standardization on Verifiable Health Credentials**

Digital COVID-19 certificates have been implemented worldwide based on either the public key infrastructure (PKI) or on distributed ledger technologies (DLTs). Korea COOV is on a Blockchain technology. Still need to understand what will it take to achieve global interoperability between the different implementations of digital COVID-19 certificates. There is a need to establish interoperability frameworks to ensure seamless verification and acceptance across borders.



### **Lessons Learned**

Need a global trust framework for future verifiable health credentials that enhances healthcare efficiency and enables secure sharing of health information while respecting privacy could be envisioned.

Need multiple verification capabilities, need rule engine as different requirements by countries, verification aren't all that science at less strict places, and need seamless international verification capability.

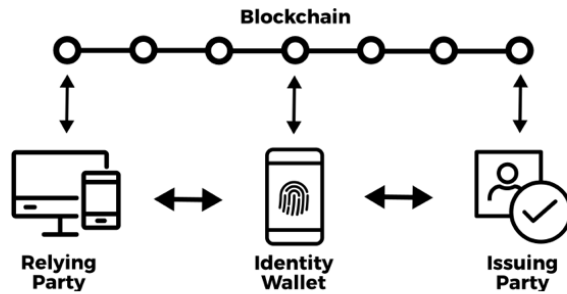


### **Expanding Verifiable Credential Use Cases based on Blockchain beyond COVID-19 Vaccination Certificate**

With successful Blockchain use case of Digital Vaccination System COOV in Korea, Ministry of Interior and Safety recently launched Digital Mobile Driver's License using Decentralized Identity using Blockchain technology targeting 20M drivers. Also issuing verifiable credentials are government employee digital ID and digital veterans ID. Planning to launch Mobile National ID card in 2024 targeting 50M Korean population.

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### Health Credentials – Underlying Technology Blockchain based Decentralized Identity



#### Trusted Framework

We should leverage strong hardware-level security such as smart phones today to manage verifiable credential in mobile wallet.

We should leverage crypto technology with Blockchain so that issuing parties digitally sign the verifiable credentials and cryptographically tie the information to the user's wallet before issuing it, and then record the transaction on the Blockchain.

Relying parties can trust that information as it is digitally signed by a trusted issuing party, verifiably issued to the user and the Blockchain provides that additional trust layer we need to ensure nothing has changed it or altered it.

#### User Consent and Privacy

Using physical IDs, cardholders decide with whom they can share their identity cards, such as their national ID. The government does not know, or keep track of, each time the cardholder shares this information with someone or some merchants etc. This is known as User Consent and Privacy – where the user is in control of their information and can decide what to share and with whom without fear that their interactions will be monitored.

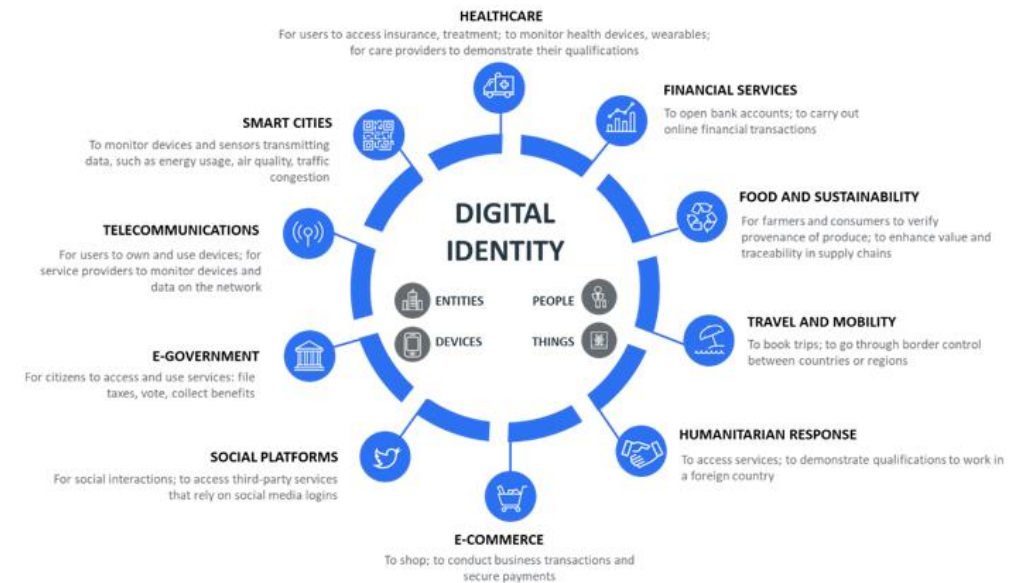
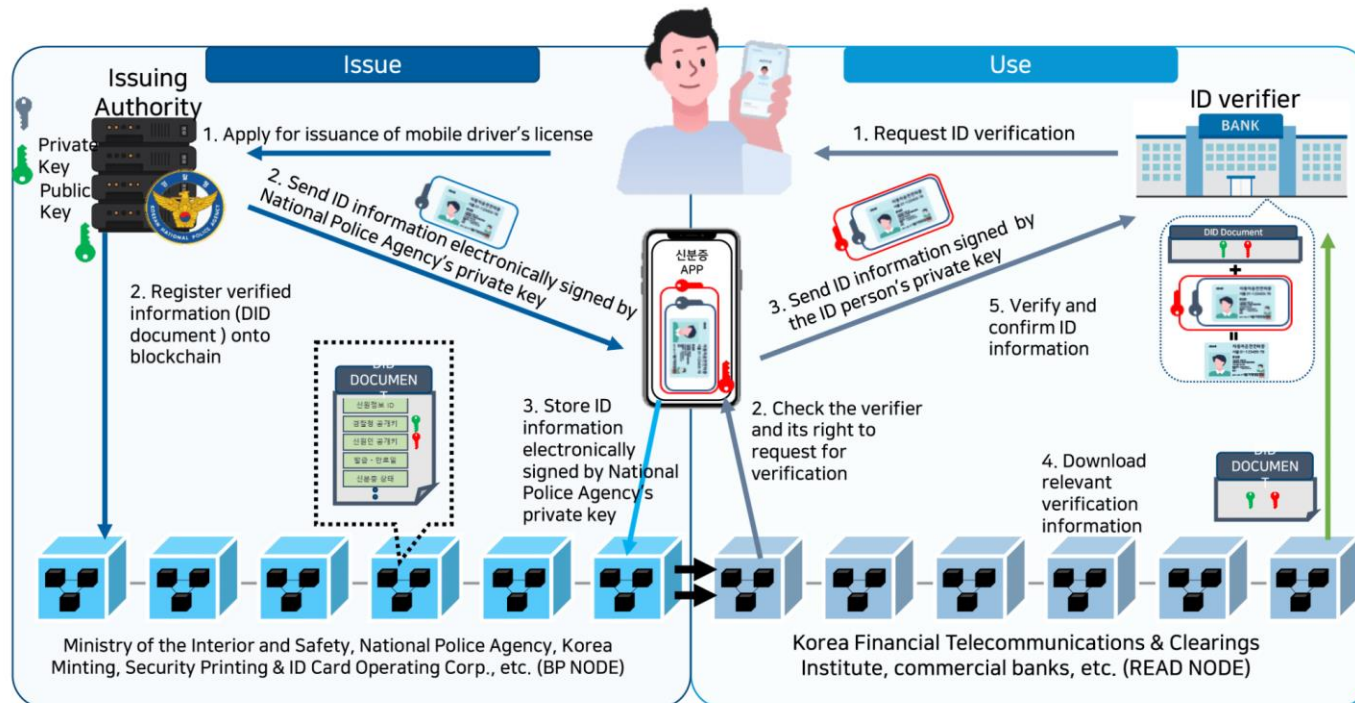
Using digital identities, the user needs to achieve the same level of privacy and consent as a physical cards. The government that issued the Mobile Driver's License should not be able to track who the user shared or presented that information with in the digital world. Federated login such as Google and Facebook logins today have this privacy issue where the identity provider knows each time the information is provided to a relying party.

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## Use Case of Verifiable Credential Expanded – Korea Mobile Driver’s License, Public Employee ID, Veterans ID

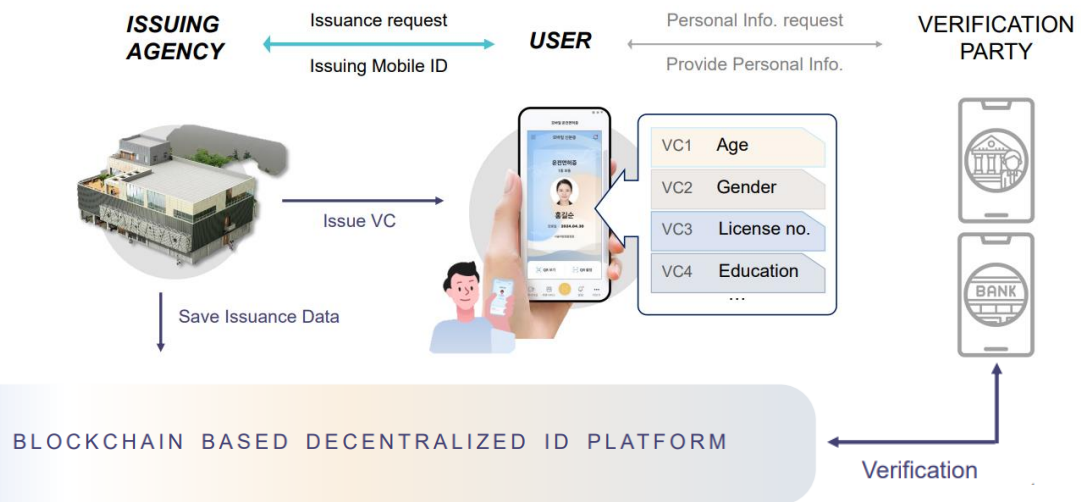
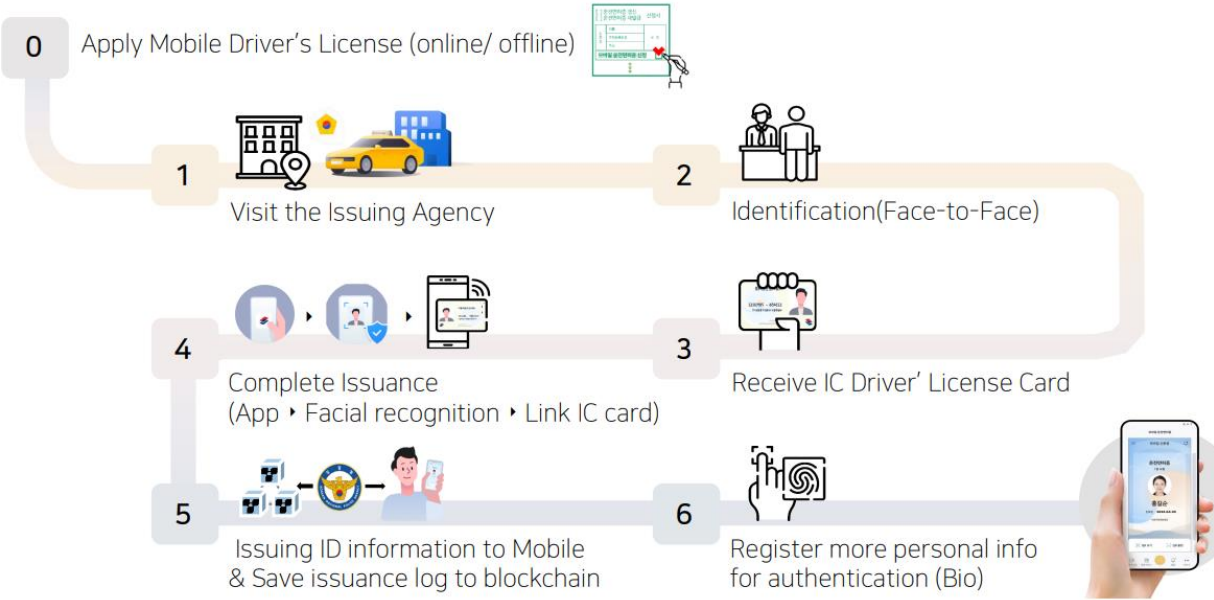
Korea Mobile Driver’s License system on Decentralized Identity based on Blockchain - an approach to Digital Identity that gives individuals control over their own identity information leveraging Blockchain to create, validate, and utilize identity information in a way that is secure, private, and not controlled by any single entity. Korea Mobile driver’s license carries the same legal effect as a physically issued driver’s license.

- Launched on July 28, 2022
- Target to migrate over 20M magnetic mobile driver license card to IC Chip based Mobile DL and issue digital mobile driver’s license gradually
- Mobile Driver’s License App downloads as of August 2023 is over 3 million
- Mobile Driver’s License Activation as of August 2023 is over 1 million and adoption is growing faster



# Use Case - Korea Mobile Driver License Governed by Ministry of Interior and Safety Operated by KOMSCO (Korea Minting and Security Printing Company)

## Issuer, Holder, and Verifier Flow



## Use Cases



**Online ID authentication**  
@online civil service portal, online banking service, etc.  
Mobile ID can be used not just only for offline work also for the on-line public / private services while mobile ID app sending **verifiable presentation (VP)**.



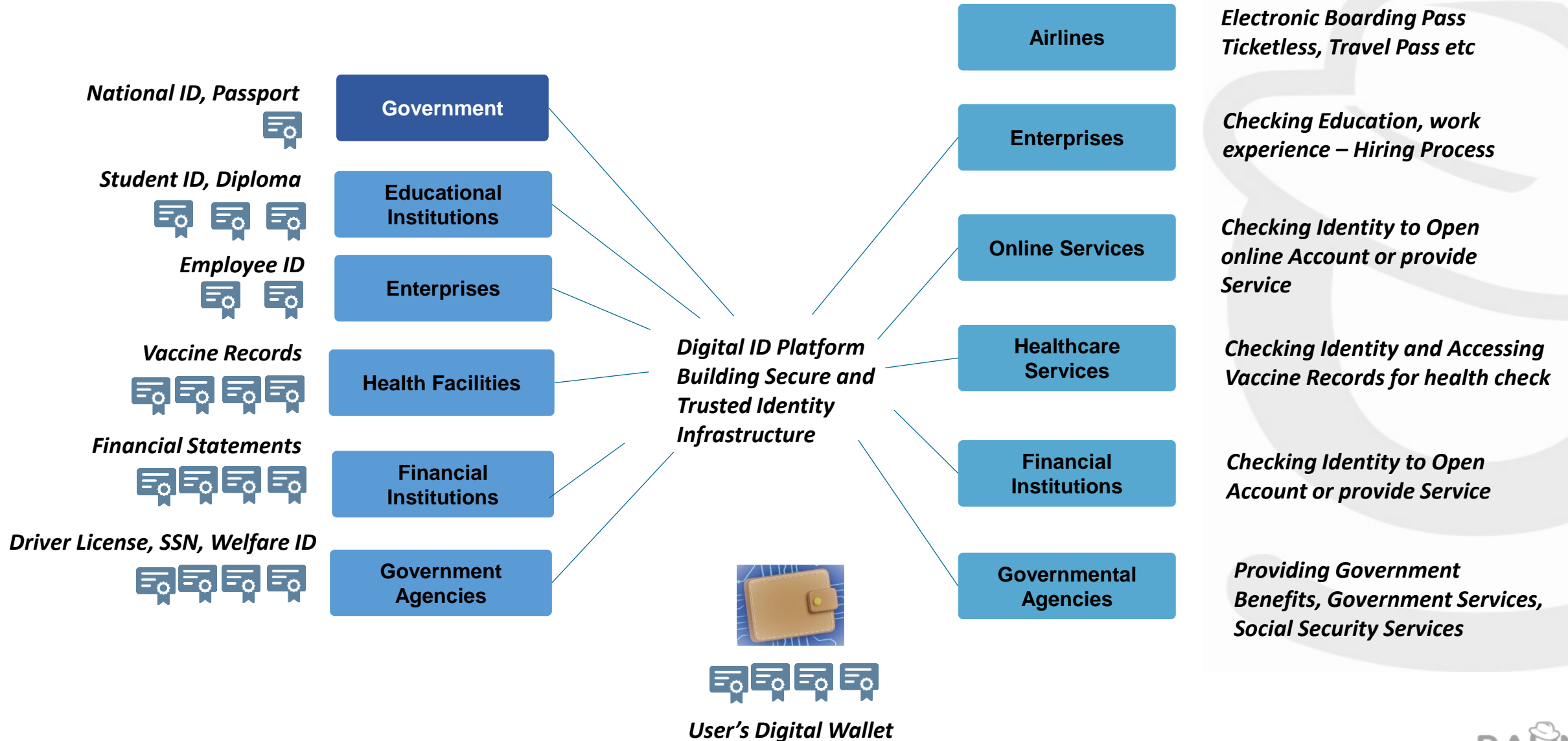
**Offline ID authentication**  
@bank, hospital, airport civil affair office, etc.  
for real ID authentication user can present mobile ID to service providers and also can send **verifiable presentation (VP)** which have same effect with scanned ID Doc.



**Age verification**  
@retail stores, restaurants, unmanned vending machine, rent-a-car, etc.  
When purchasing items that require age verification, customer can present mobile ID or use **ZKP (Zero-Knowledge Proof)** to ensure their adult status

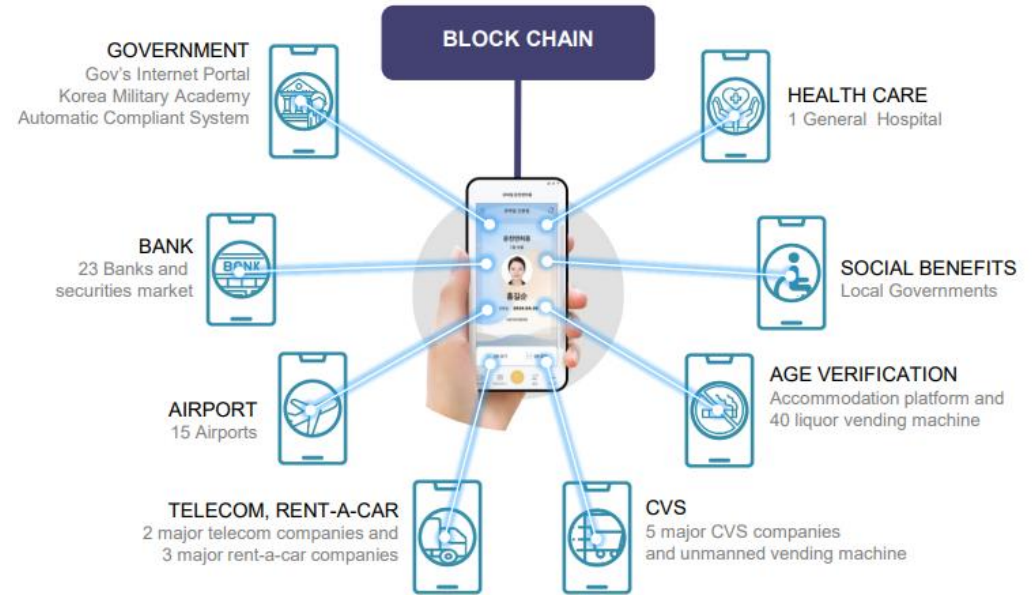
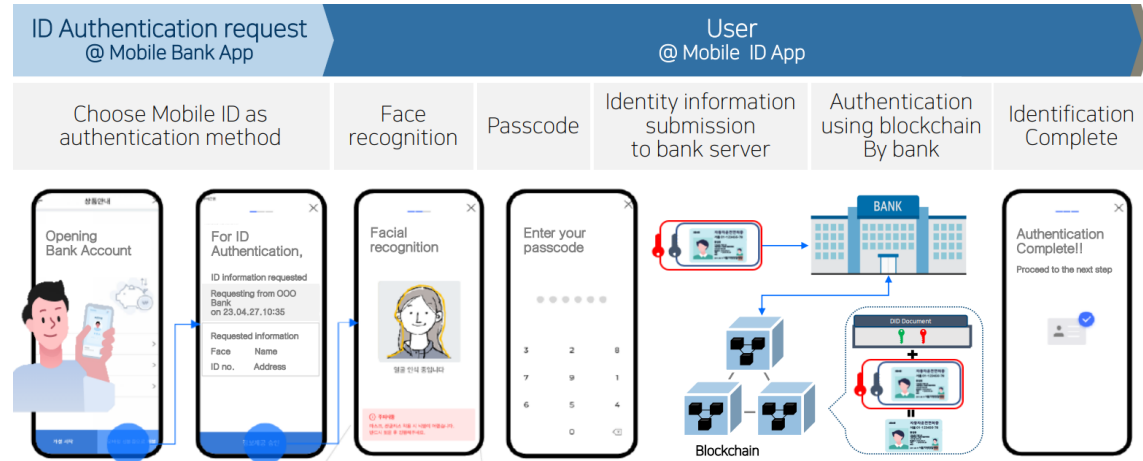
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## Use Cases of DID Platform



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What are other potential use cases leveraging Korea Mobile Driver's License?



**Powerful Authentication** – Authenticate using the most reliable credential such as Digital National ID or Mobile DL for online banking, stock trading, insurance, eGovernment services, healthcare service providers, and other strong authentication required services.

**Certificate Issuance** – Validate digital ID to issue digital certificates such as diploma, professional license, school transcript, vaccine record, training certificates, employee ID, certified invoice, and other Identification or Certification in the form of verifiable credentials.

**Control your own information** – Present only age for age verification, share city or state information without full home address, share gender information online without the full personal profile, and control what information is shared.

An aerial photograph of a grey floor with several groups of people. In the top left, a group of four people is gathered around a table with laptops. In the center, a person in a white shirt is running. In the top right, two people are sitting on the floor. In the bottom right, two people are sitting at a table with a laptop. The top half of the image is a solid orange color with faint, semi-transparent versions of the same scenes.

# Q & A