Asia IC Card Forum
One Card, One Asia on the Silk Road

40th Anniversary
ETRI 1976-2016

e-ID Card in Korea

2017. 5. 15.

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01
Background

Background

1. Background

- from 1968
- to identify the individual
- to monitor the residence dynamic trends in population
- to find out spies or secret agents

2. Usages

- Administration in official business
- Commercial business : banking, real estate..
- Welfare for seniors, handicapped persons

Background

3. Security features

- to protect personal information
- to protect the counterfeit & forgery the e-ID card

4. Registration Number outflows accidents

- Jan. 2014 : KB card 53 million, Lotte card 26 million, NH card 25million

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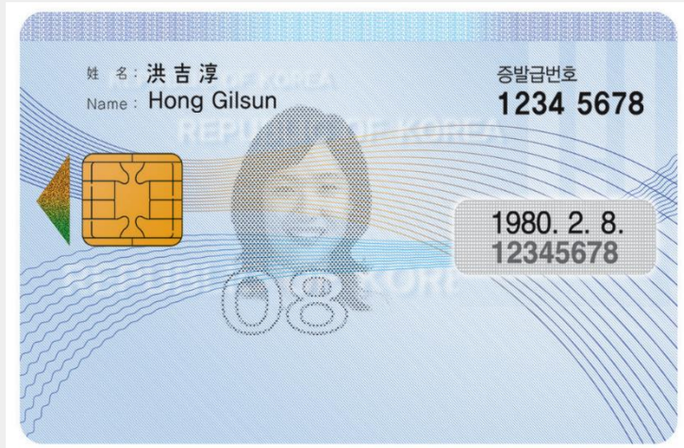
02
History

History

1. 1990's

- Issued by Government (內務部)
- Contains many information
  . Name(Korean, Chinese), Birth date, Registration Number, Sex, Issuing Office, Issuing date, Address, Fingerprint, Blood type, Photo, etc.
- Usage
  . All of the government
- Results : postponed(?) by NGO's
- Reasons : contains too many information
  in the case of lost or stolen, leak personal information

History



2. 2000's

- improve by holding several comments
- and to adopt new address system
- Issued by Government (行政自治部)
- Contains several information

  . Surface(+back) : basic information

  Name(Korean, Chinese), Photo, Birth date, Sex, Issuing Office, Issuing date

  . IC chip(security devices) : sensitive information

  Registration Number, Address, Fingerprint, Blood type(option) etc.

  . New features

  issuing number (different registration number), validation date

- Results : postponed(?) by NGO's
- Reasons : too many budgets

History

3. 2010's

- target is changed
- improve by Resident Registration Number(RRN, 主民登錄番號制度) not devices
  . New plan contains the devices.
- Issued by Government (行政安全部)
- Several ideas
  . Random number (like SSN in USA)
  . IPIN (Internet Personal Identification Number)
- Status : in progress

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03

Features in Security

Features in Security

- **Protection from leakage internal information from IC Card**

  - basically protected by COS and tamper-proof circuits

  - protect by secure channel between IC card and reader using mutual authentication

    . Cut off the attempt to access from malicious counterfeit attack

  - finally access the sensitive information by his consent

    . PIN, fingerprint, etc.

Features in Security

Security Features	Security Mechanism
Confidentiality	· data encryption/decryption using crypto-algorithm
Authentication	· reader - External Authentication · card(device) - Internal Authentication · user - CHV(Card Holder Verification)
Access Control	· conditional access control by files or commands
Integrity	· secure Messaging (use encryption/decryption in message transmission and MAC) · data integrity - encryption/decryption using crypto-algorithm + MAC
Repudiation	· secure Messaging using MAC
Prevention of counterfeit & anomaly	· Prevention of counterfeit & anomaly by secret data · by authenticity & certification using public key pairs

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04

Remarks & Discussion

Remarks & Discussion

1. Biometrics

- what kind of biometrics
- who issue
- how to verify

2. Inter-operation & Standardization

- driver’s license, e-passport, crew card
- how to interoperate

3. Virtual residence card(number) using mobile devices

- possibility the mobile NID
- how to operate, identify

Thank you!!!!