Advanced Research Center for Social Information Science and Technology   ASIST

Research for solutions of social issues by ICT

- **Establishment of social infrastructure to ensure personal identity verification**
- **Development of the technology for medical information co-operation**
- **Utilization of health and medical information through life span**
- **Improvement of system procurement to support e-Government**

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Researches in ASIST

Social Information Infrastructure

R & Ds on the technology of network and personal identity verification, which realize safe and secure access to the personal information by the authorized user. It enables individuals to control their information managed by both central and local governments as well as medical institutions.

e-Government System

R & Ds on the procurement scheme to address cost-effectiveness and issues such as delayed reform in government information system procurement, aiming to achieve a significant enhancement in the efficiency of developing highly secure and reliable systems.

Healthcare Services

R & Ds on the medical information co-operation based on personal authentication using infra-structure of Individual Number system, and data refinement techniques to enhance the reliability and usefulness of purpose-specific health and medical data obtained through data mining.

Final Goal ▶ Contribute to the realization of individual sovereignty in information circulation allowing individuals to utilize their personal health and medical information at their discretion, and enhance its value through advanced healthcare information services.
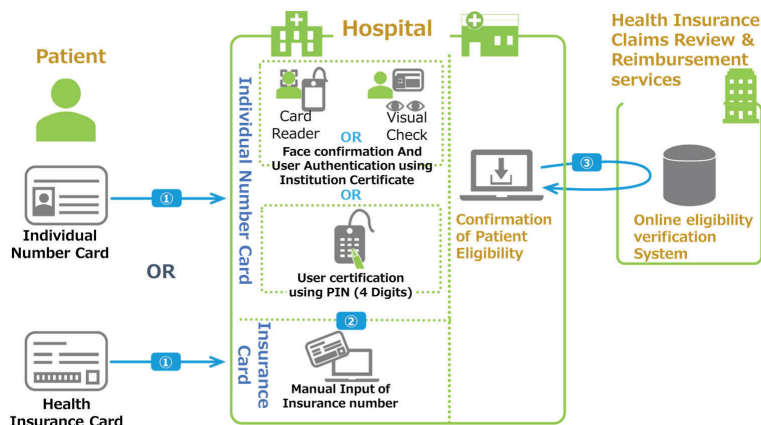
ICT Policy Proposal & Recommendation

- Security of digital infrastructure for information co-operation in Individual Number system
- Design of multi-application IC card and Individual Number Card with PKI
- Effective IT governance on e-Governments for the national and local governments
- BPR for e-Governments using BPMN
- DX by using electronic automobile inspection certificates
- Utilization of public personal identification service in the medical field (Online eligibility verification of national health insurance. Please see the figure below.)
- Introduction of electronic prescription for better patient safety to prevent duplicate medication and contraindicated drug administration

Collaboration with Industry

- Next Generation IC Card System Study Group (NICSS)
- Healthcare Information Secure Network Consortium (HEASNET)
- e-Government IT Investment Study Group
  Etc.

Development of Core Technology

User Authentication using Institution Certificate

- ✅ It is a technology that enables user authentication even when user has difficulty to use the PIN code of IC card (Patent No. 5300026).
- ✅ This scheme is actually installed in Individual Number Card and being used for the online eligibility verification of national health insurance. Please see the figure on the lower left.

Example of the realized Proposal

Online eligibility verification of national health insurance using Individual Number Card

- ✅ From April 2023, the Individual Number Card is available as a national health insurance card at almost all hospitals and pharmacies. The medical institutions can verify the eligibility of the patient's health insurance on site.

Patient

Individual Number Card

OR

Health Insurance Card

Hospital

Individual Number Card: Card Reader OR Visual Check — Face confirmation And User Authentication using Institution Certificate OR User certification using PIN (4 Digits)

Insurance Card: Manual Input of Insurance number

Confirmation of Patient Eligibility

Health Insurance Claims Review & Reimbursement services — Online eligibility verification System

[Source] Ministry of Health, Labor and Welfare website(Partially modified)
https://www.mhlw.go.jp/content/10200000/000619590.pdf (Japanese)

Service Provider / Device Verification / User Certificate Verification:
SP (Institution) Certificate, SP (Institution) Private Key, Card Issuer Public Key (Key 2), Institution Code, Sign, Random no. 1, Random no. 2, Institution Code, Verification, Service Start

User: User Device, JPKI AP, Random no. 1 Generation, Random no. 1, SP (Institution) Public Key, Random no. 2, Institution Code, Sign, Verification, Certificate Reading, Card Issuer Public Key (Key1), User Public Key Certificate, User Private

Insert Individual Number Card