3. Development of Security Assurance Scheme for SCU which can be embedded to low-cost IoT devices

A
Creation & Confirmation

AFFILIATION: Electronic Commerce Security Technology Research Association (ECSEC TRA), National Institute of Advanced Industrial Science and Technology (AIST)

Systematic threat analysis clarifies security requirements and finds good tradeoffs between security evaluation rigor and development man-hour.

Technical Features

Security level classification

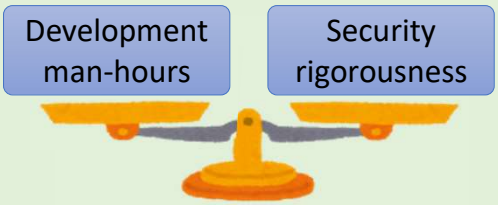
Ensuring the validity of how to classify the level of certainty of security implementation and of how to show security for the low-cost IoT nodes.

Security assurance schemes

Building security assurance schemes (security evaluation technology and certification framework) optimal for devices using hardware roots of trust.

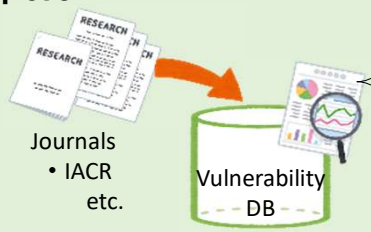
Security assurance of SCU-used IoT devices

Based on cryptographic hardware roots of trust, develop highly reliable devices at reasonable cost



Systematic aggregation of attack methods for IoT devices

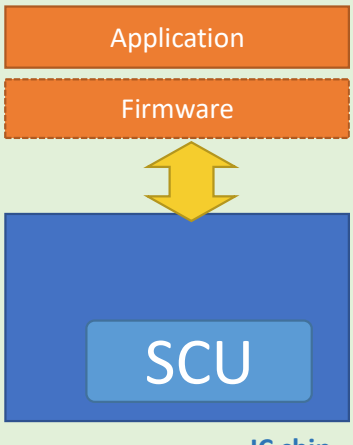
Construct vulnerability DB by investigating major papers



- Physical Attacks
- Overcoming sensors and filters
- Perturbation Attacks
- Retrieving keys with DFA
- Side-channel Attacks
- Exploitation of Test features
- Attacks on RNG
- Java Card applications
- Software Attacks

Building security assurance schemes for roots of trust

Ensuring security of an IoT device by using an SCU as root of trust



User oriented Approach
- Guideline
- Checklist

Reliable use of cryptography achieving low power consumption and high security

Rigorous Assurance

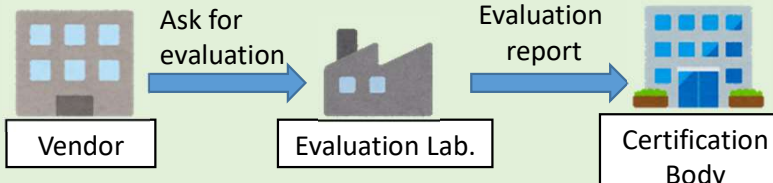
Building security assurance schemes for SCUs

Certify SCUs used in the target IoT devices as cryptographic modules

- SOGIS
- JEDS
- JHAS

Overseas Organizations

Consider how security assurance for SCU-used devices should be, based on discussion trends such as vulnerability rating in SOGIS*1 and evaluation assurance level EAL*2,



*1 Senior Officials Group Information Systems Security
*2(Evaluation Assurance Level)

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