



# System and Practice of Information Security Certification for IT products in China

CHINA INFORMATION SECURITY CERTIFICATION CENTER



# Catalogue

**01**

**Introduction to IT product information security certification**

**02**

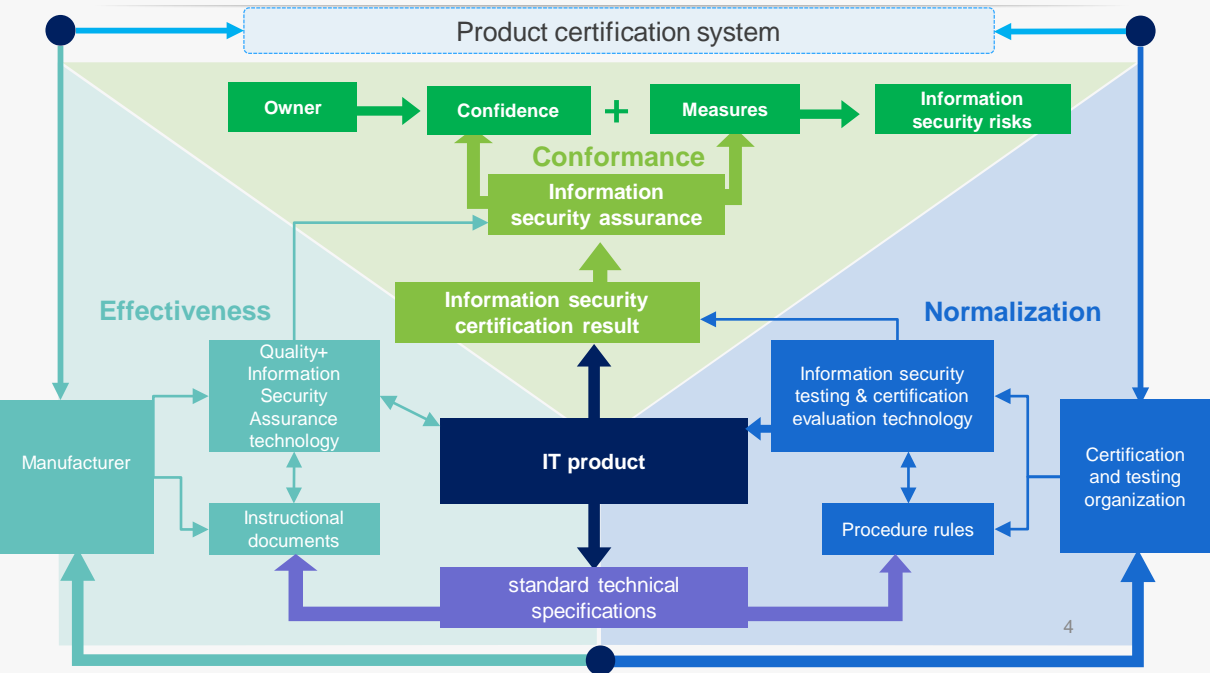
**Practice of industrial control security product certification**

## Setting background of IT product information security certification

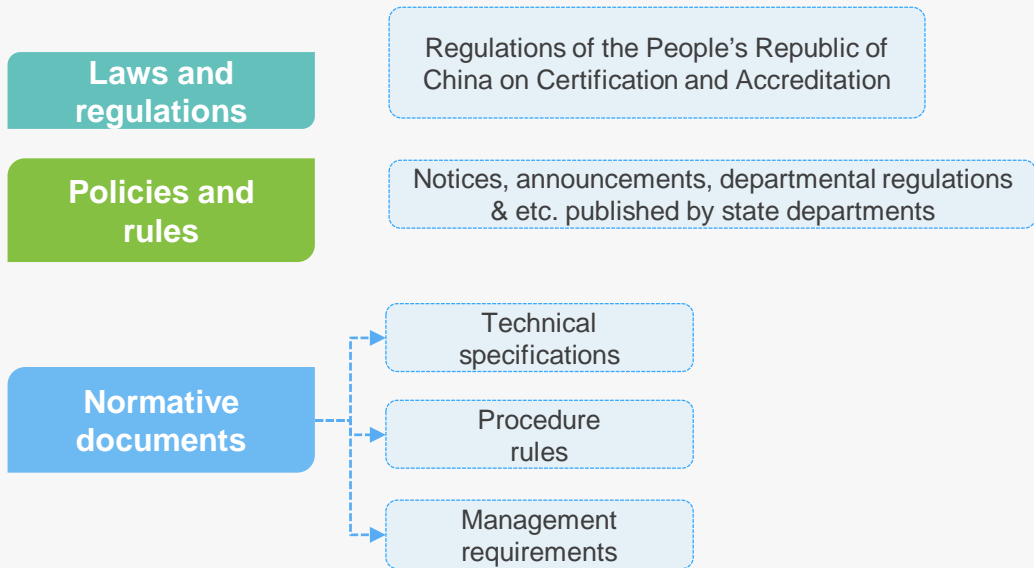
IT products are a basic unit to form key information infrastructure, such as basic networks, important information systems, industrial control systems and etc., and the significance of their information security has become increasingly obvious.

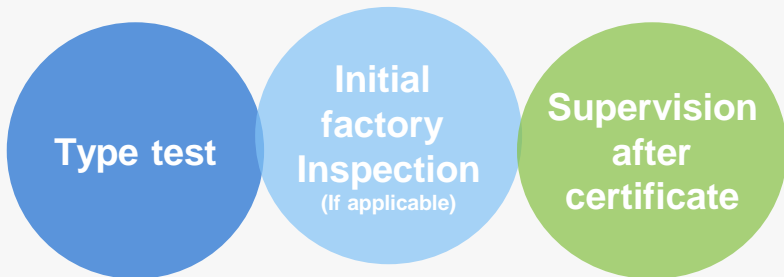
The risk of IT products information security vulnerabilities has become increasingly serious, as a result, related networks and systems are facing security risks of sensitive information leakage, system outage and other major security incidents.

# Purpose and meaning of certification



# Certification system





**Validity of certificate: the certificate is valid within 3 years**

**Change of certified products**

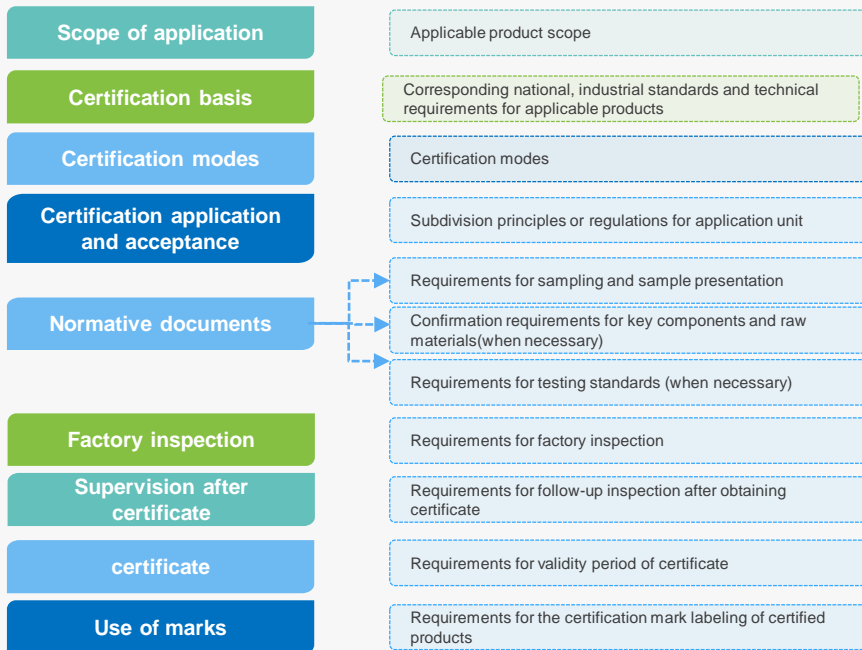
- In case of any change to manufacturer, holder of certificate or related address & etc., a change application shall be submitted to the certification organization.
- The change of other certificates shall be executed as per related Implementation Rules
- After the certificate is expired, please reapply for the extension of certificate validity when necessary

**Extension of products covered by the certificate**

- Please submit an extension application to the certification organization when extending the certification scope for certified products.

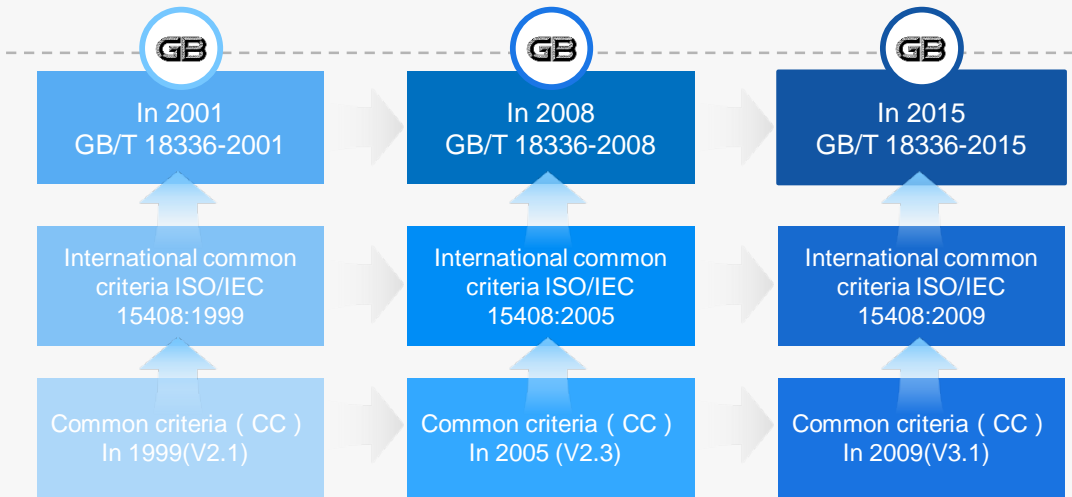
# Certification Implementation Rules

## Main contents of certification rules



Specify the certification requirements for specific products  
Guide the implementation of certification activities

# Standards and Specifications (GB/T 18336 )







- One of the important technical bases of carrying out information security certification work in China is the common standards of information security product certification and the normative and reference standards of security technical requirements/national standards/industrial standards for related products.

## Security technical standards

### GB/T 18336

Information security products  
IDS、IPS、UTM、security audit  
products, etc.

IT products integrating security  
function  
IT products with smart cards, switches  
and operating systems

IT products with new technology  
& new application  
Cloud computing, **industrial control**,  
internet of things...

## Testing and evaluation methods

Security assurance evaluation: development documents, life cycle support & instructional documents and test documents

Security tests: independence test, penetrability test and security assurance evaluation

Test results: type test report and evaluation technical report

## Factory inspection requirements

Inspection of information security assurance ability, quality assurance ability and product uniformity

# Progress of certification business



## 70 technical Specifications

- Access co product across boundaries, data security product, identification and access control product
- Intrusion supervision product, basic platform product, application security product and security management product
- Smart card product, and IT product integrating security function
- Special product for industrial control and internet of things

## 9 test labs

The 15th research institute of CETC ( NCI ) , Beijing Information Security Test and Evaluation Center, Shanghai information security Testing evaluation and certification center, CETC information security lab, Liaoning information security and software testing evaluation and certification center, the 1st institute of the Ministry of Public Security, China Financial Certification Authority, the 3rd institute of the Ministry of Public Security, and the 6th research institute of China Electronics Coporation

## Authentication certificates

Issued 366 certificates accumulatively, including 243 valid certificates



# Catalogue

01

**Introduction to IT product information security certification**

02

**Practice of industrial control security product certification**

# Security challenges faced by industrial control network



As national strategies like “made in China 2025”, “internet+” were put forward, the information security construction of industrial enterprises has been put on the schedule, and the industrial control network security is faced with greater challenges.

## Control security

Factory's control environment is threatened and permeated by external internet due to **Opening control environment**

## Network security

Greater security risks are brought to factory network by **IP-based & wireless network, and networking flexibility**

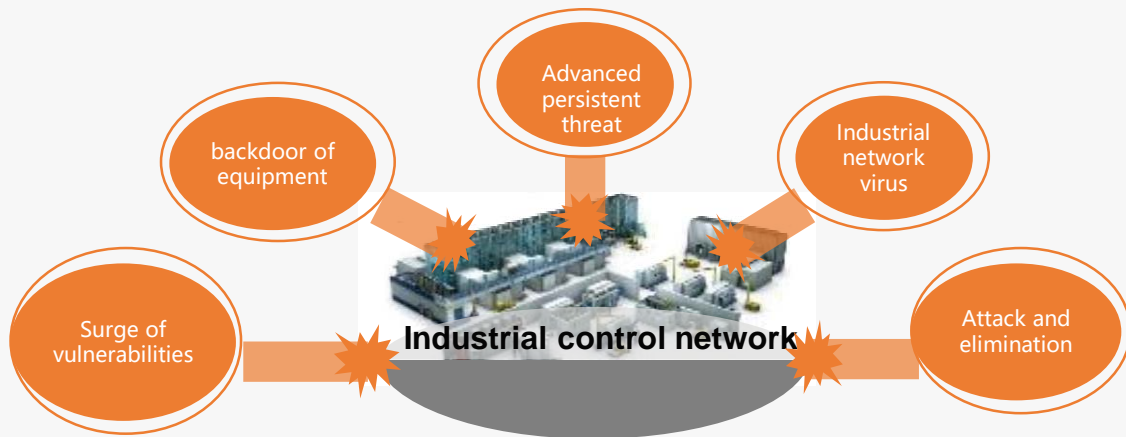
## Data security

Data and privacy protection are faced with unprecedented challenges due to **flow and share**

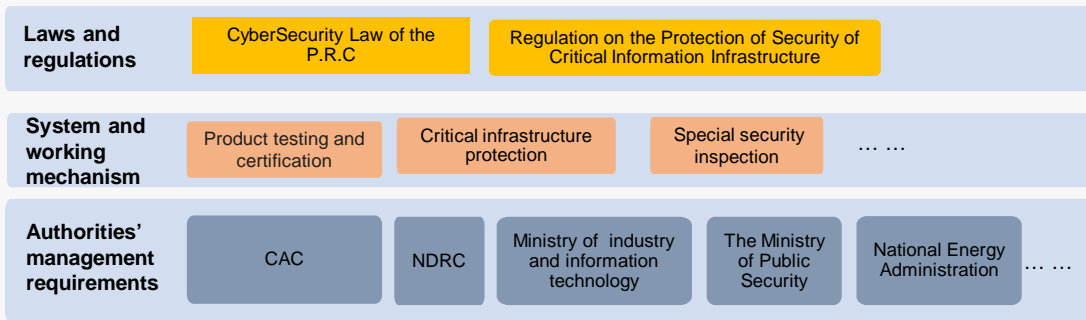
## Equipment security

Production equipments and products are exposed under the network attack due to **Intelligent equipments.**

# Security risks faced by industrial control network



# Requirements for industrial control security management



Critical industries: rail traffic, electric traffic, petrochemical industry, aerospace equipments, etc.

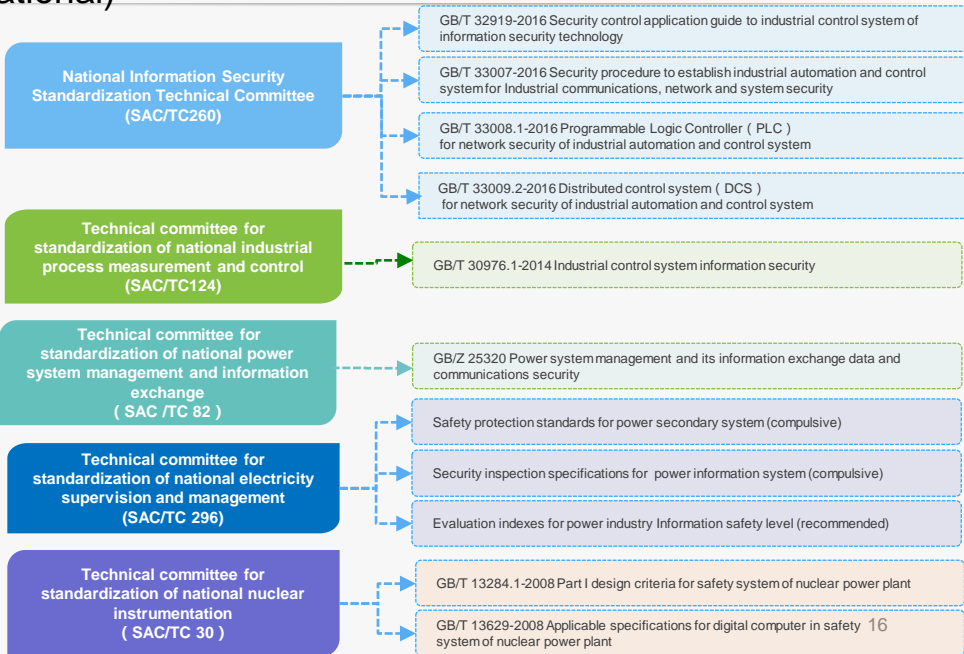
Alliances and associations: industrial control information security industry alliance(ICSISIA), industrial internet industry alliance and critical infrastructure protection committee, etc.

# Industrial control security technical standards (national)



中国信息安全认证中心  
CHINA INFORMATION SECURITY CERTIFICATION CENTER

Standardization Administration of the people's republic of china (SAC)





# Industrial control security technical standards (industrial)



## Standards of mechanical industry

JB/T 11960-2014 Security networks and system security for industrial process measurement and control (IEC/TR 62443-3:2008)

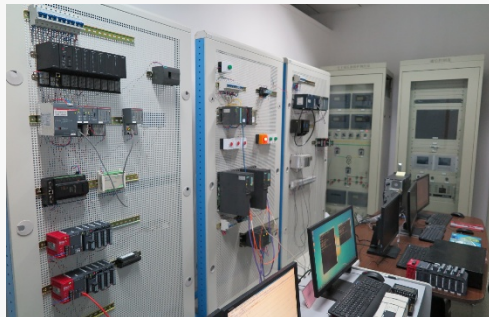
JB/T 11961-2014 Safety terms, concepts and models for industrial communications network and system (IEC/TS 62443-1-1:2009)

JB/T 11962-2014 information security technology for industrial communications network, network and information system, industrial automation and control system (IEC/TR 62443-3-1:2009)

## Standard of nuclear industry

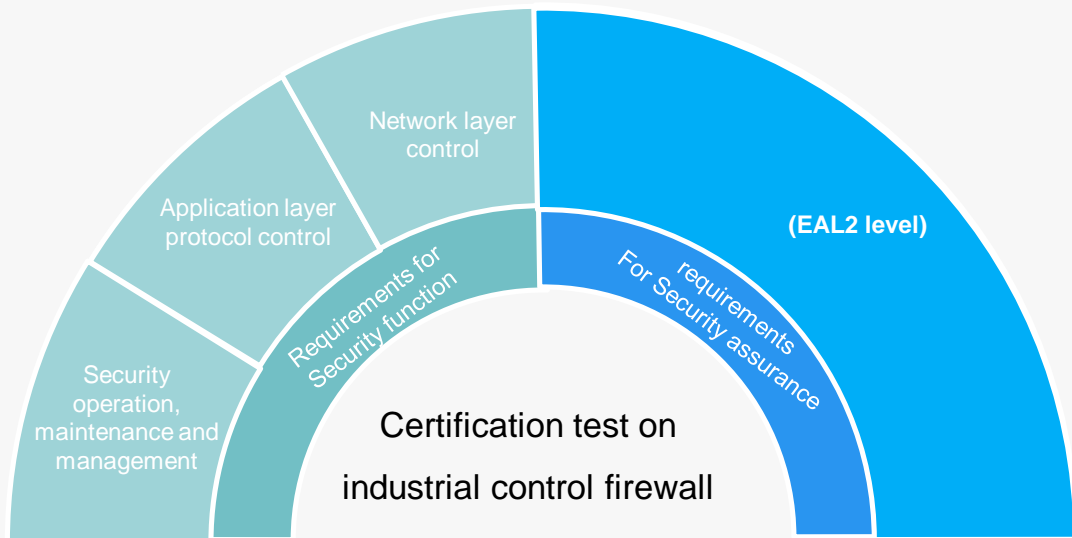
HAD102-16 Computer-based software for important system security of nuclear power plant

# Certification for industrial control security products

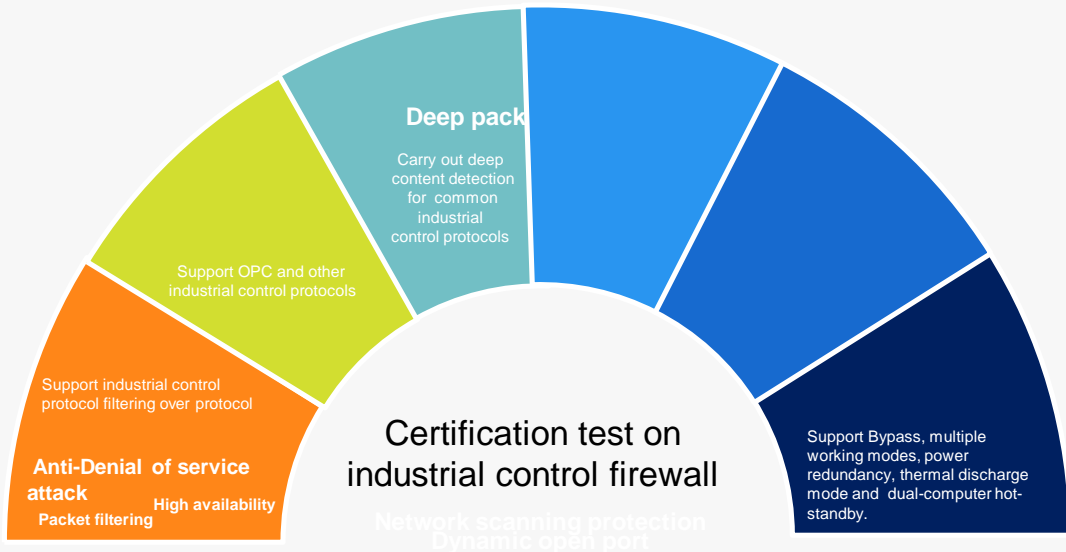


- Based on IT product information security certification, ISCCC and their joint lab have carried out the industrial control product testing certification, including industrial control firewall products, industrial control gatekeeper products, industrial control safety auditing products & etc.
- The related labs have carried out the verification tests for safety technical specifications of PLC, DCS and other equipments.

# Certification case: industrial control firewall



# Certification case: industrial control firewall



# Certification case: industrial control firewall



	Test items	Traditional firewall	Industrial control firewall
1	Packet filtering	Filtering based on MAC address, IP address, port, protocol type, time & etc.	Support industrial control protocol filtering over protocol
2	NAT	Support SNAT、DNAT	Optional, deployed in the control layer, usually transparent
3	Policy routing	Support related function of Policy routing	None related requirements
4	Dynamic open port	Support FTP and other protocols	Requirements for supporting OPC and other industrial control protocols
5	Deep packet inspection	For some common protocols (http, smtp & etc.)	Carry out deep content detection for common industrial control protocols
6	High availability	dual-computer hot-standby	Bypass, working modes, power redundancy, thermal discharge mode and dual-computer hot-standby. <sup>21</sup>

The background features a large, faint watermark of the ISCCC logo, which consists of a shield with a gear and a key, surrounded by the acronym 'ISCCC' at the top.

# Thanks !

Bu Ning

China information security certification center/ISCCC

[buning@isccc.gov.cn](mailto:buning@isccc.gov.cn)

[www.isccc.gov.cn](http://www.isccc.gov.cn)