

# Introduction of IT Audit Group and 「U-check」




Board of Audit and  
Inspection of Korea





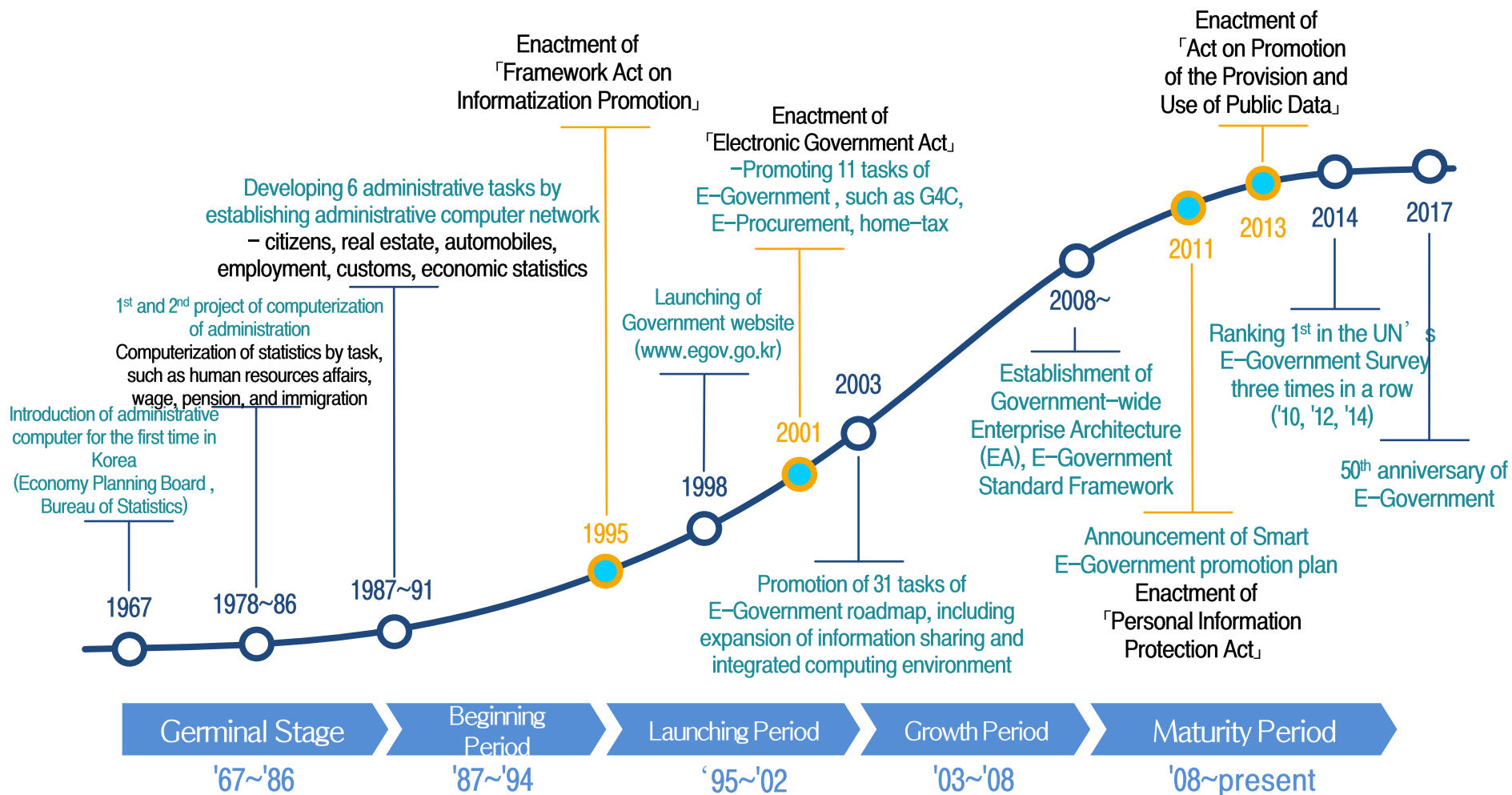
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# 01 Current Status of National Informatization

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## Development of National Informatization

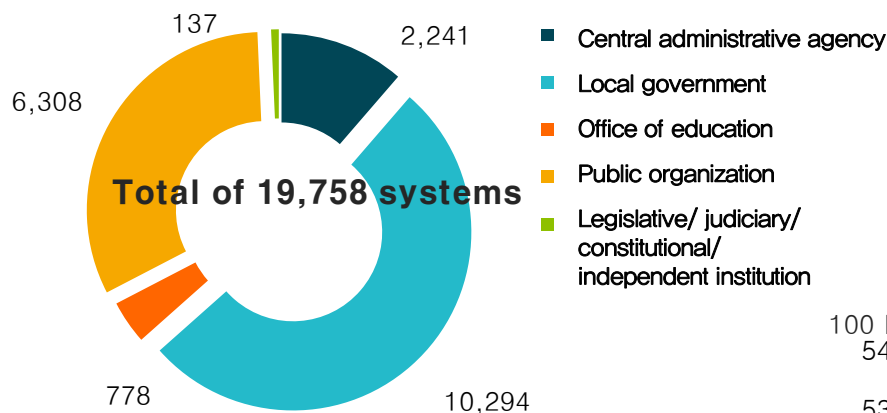


# 01 Current Status of National Informatization

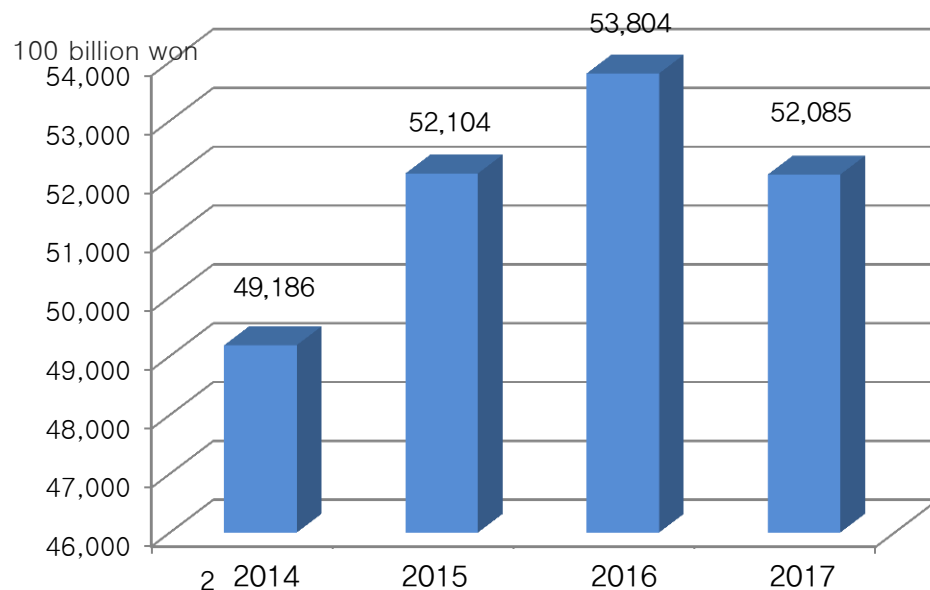
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## Operation of National Informatization

### Information System in the Public Sector (2016)



### Budget for Informatization Project



## Achievements of National Informatization

### Public



**Improvement of people's quality of lives thanks to efforts, such as online civil affair service**

- ▶▶ Number of using Minwon 24 (civil petition registration service)  
: ('04) 7.79 million → ('08) 53.50 million → ('15) 65.19 million

### Gov't



**Improvement of productivity and transparency of administrative work thanks to computerization of government work**

- ▶▶ Sharing administrative information : ('07) 38 million → ('15) 337 million
- ▶▶ National Computing and Information Service :  
('14) operation of 22,600 computing devices for around 1,300 work systems at 44 government departments

### Enterprises



**Supporting enterprise's competitiveness power by providing services online**

- ▶▶ Export clearance (electronic customs clearance system UNIPASS) :  
1 day → 1.5 minutes
- ▶▶ Patent examination (online patent system KIPOnet): 21 months → 13.2 months

### Network Preparation Index

Republic of Korea	10th
United States	7th
United Kingdom	9th
Australia	18th
Canada	17th

The Global Information Technology Report 2014(WEF)

### ICT Development Index

Republic of Korea	2nd
United States	14th
United Kingdom	5th
Australia	12th
Canada	23rd

Measuring the Information Society Report 2014 (ITU)

### Public Data Utilization Index

Republic of Korea	1st
United States	9th
United Kingdom	3rd
Australia	4th
Canada	5th

2014 OECD Survey on Open Government Data

### Background behind Launching of IT Audit Group

Increased  
importance  
on IT



Problems of  
national  
informatization

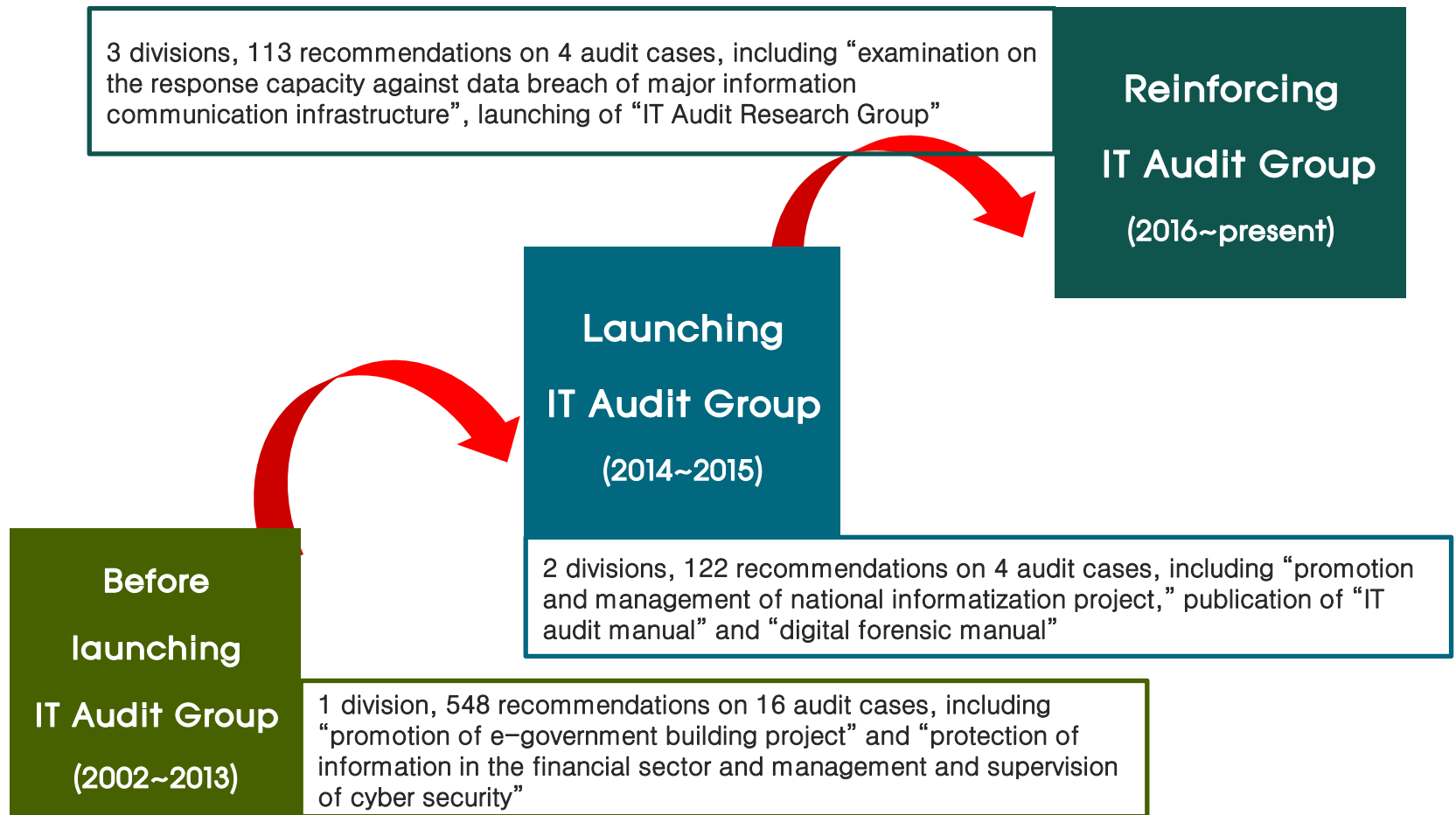
Informatization society ⇒ changes in economic, social, and technological environment  
Active introduction of IT across all areas within the country and society  
⇒ around 5 billion won of annual budget for informatization  
IT system contributes to the improvement of administrative efficiency and public's convenience.

Increased demand on the  
audit in the IT sector

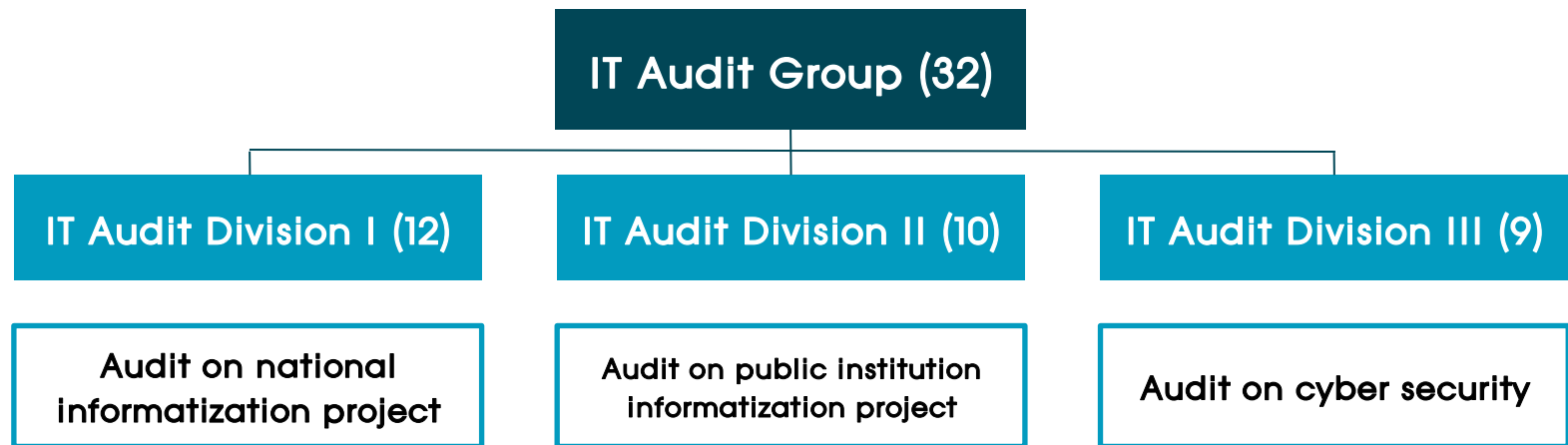
Importance in  
securing expertise  
in the IT sector

Macroscopic viewpoint : limited utilization of public information, redundant systems, negligence of cyber security  
Microscopic viewpoint : limited expertise of the public official, poor management of existing systems, irregularities

### History of IT Audit Group



### Structure of IT Audit Group



+ Audit on 5 IT specialized institutions including National Information Society Agency and Korea Internet & Security Agency

Specialists in  
IT and  
Information  
communications

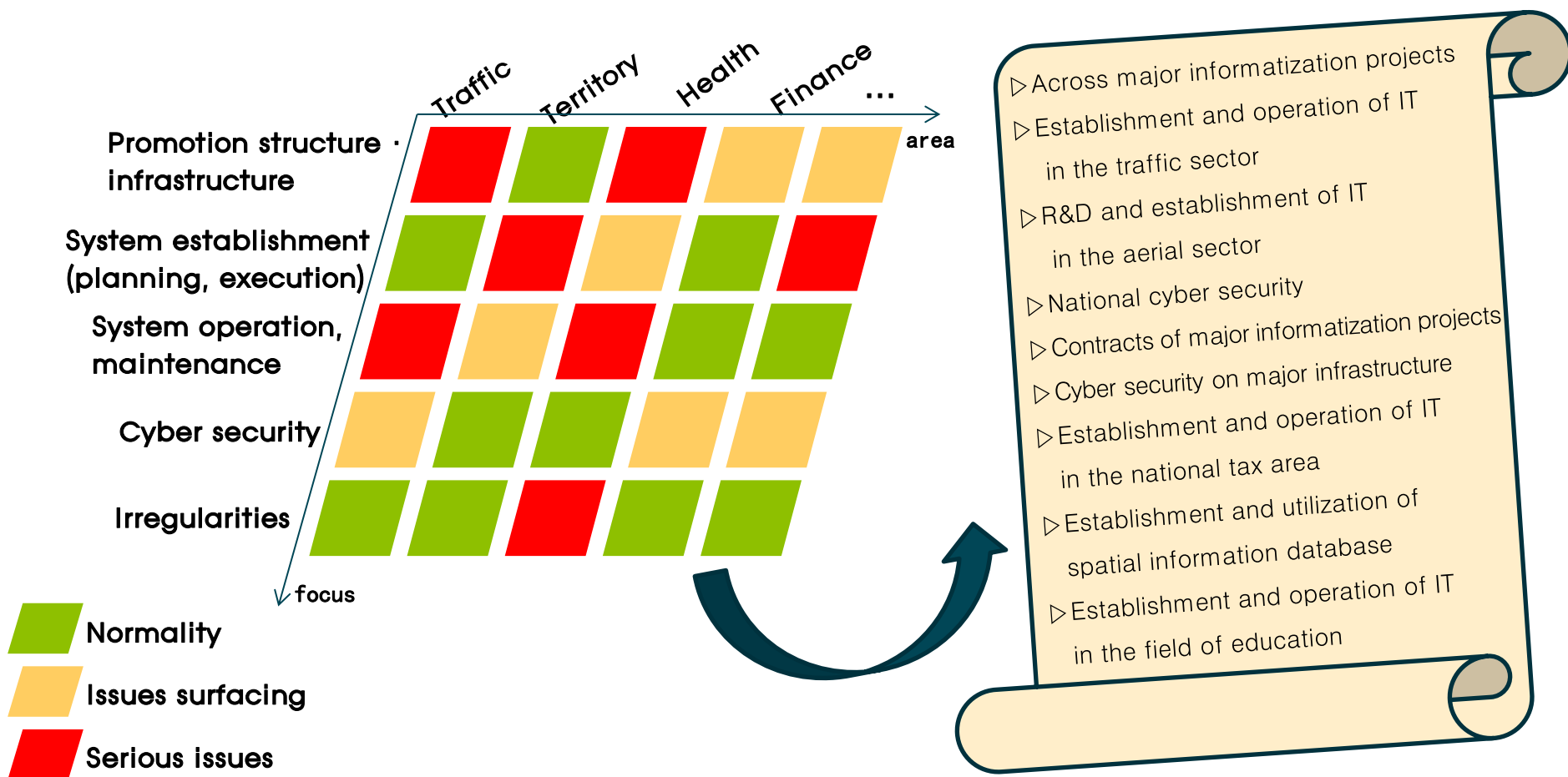
There are 11, including 2 Ph.D.s, 1 forensic expert, and 1 personnel dispatched from an IT specialized institution



# 03 Key Audit Focus and Achievements

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## Selection of Audit Subjects



## Key Audit Focus

1

### Establishment of Information System

Classification	Checklist
Planning	<b>Validity of the business plan</b> (possibility of making achievements, modifying laws and regulations for informatization, redundancy with the private sector)
	<b>Redundancy with other systems, necessity for linking</b> (pre-discussions, checking Government-wide Enterprise Architecture Portal)
Selection of business operator and contract	<b>Appropriateness of requests for proposal</b> (reflecting requirements on the business plan, appropriate device capacity, etc) <b>and business expenditure</b> (calculating function points)
	<b>Fairness of selecting a business operator</b> (setting qualifications for participation in a tender, evaluation of business proposals, unfair proposals, etc)
Project management and Inspection	<b>Appropriateness of setting required tasks</b> (comparing requests for proposals and proposals) <b>and managing changes</b> (necessity for changing required tasks, change procedure)
	<b>Security management and introduction of verified information protection system</b> (security measure/personal information protection measure)
	<b>Inspection of project output</b> (checking business plan/statement of expense/operation) <b>and Imposing penalties for delay</b> (compliance with development schedule)
	<b>Acquisition of output</b> (design output, manual, intellectual property rights ownership, etc)

## Key Audit Focus

### 2

### Operation of Information System

Classification	Checklist
Operation and management of achievements	<b>Fixing user inconvenience during operation and appropriateness of handling errors</b> (repetition of the same errors, reviewing issues from examinations)
	<b>Usage of information system</b> (system malfunction, low usage caused by no linking of information)
	<b>Reviewing disposal of the system according to achievement management</b> (reviewing keeping/disposal/improvement according to the guidelines of achievement management)
Internal control	<b>Management of access authority</b> (Granting minimum/divided authority allowed in the regulations) <b>and personal information</b> (appropriateness of access control)
	<b>Appropriateness of data entering and manual data entering</b> (possibility of changes of entered data, etc) <b>and appropriateness of data management</b>
	<b>Control of task-handling</b> (handling errors when violations of regulations and errors are discovered, approval procedure by handling process)
Maintenance and advancement	<b>Appropriateness of required tasks</b> (identifying subjects for maintenance and advancement) <b>and project expenditure</b> (project expenditure for only subjects for maintenance, etc.)
	<b>Appropriateness of conducting required tasks</b> (redundant implementation with maintenance, advancement, etc.)
Information sharing & disclosure	<b>Appropriateness of promoting information sharing and disclosure</b> (appropriateness of declining sharing, standardization, etc)

## Key Audit Focus

3

### Cyber Security

Classification	Checklist
Administrative security measure	<b>Management of information assets</b> (PC, server, data, etc.; management of information system management book, personal information management book)
	<b>Security management</b> (checking employee's access authority and outsourced employee management)
	<b>Security management of informatization project</b> (reviewing security when developing information system, developer management)
	<b>Response management against data breach</b> (reviewing security control, breach management, and log history)
Physical security measure	<b>Management of protective areas and protective facilities</b> (computer room access control, protection measure against fire)
	<b>Security management of disaster recovery system</b> (reviewing disaster recovery/backup system and history of simulated training)
Technological security measure	<b>Security management of PC and server</b> (managing accounts, update, storage medium control, access authority)
	<b>Network security management</b> (net separation, certification of network device, simulated hacking)

### Major Audit Cases

#### Reviewing Redundancy in Informatization Projects

- ❖ A government organization promoted a project to establish Urban Traffic Information System (UTIS) (2005–2014, around 255.9 billion won) to collect and provide traffic information using mobile data terminals (navigations).
  - Due to changes in technological and market environments, as of 2014, collection and provision of traffic information through smart phone apps in the private sector have become popular.
  - Accordingly, **limited distribution of UTIS mobile data terminals**, caused by contracted market for vehicle navigations has led to a **vicious cycle** of “low utilization of UTIS traffic information → limited information collection → low accuracy and credibility of the system.”
- As of 2014, T-map and Driver Kim (smart phone navigation apps) have been downloaded 18 million and 8 million times, respectively while only 70,000 mobile data terminals have been distributed. (UTIS app downloads: around 60,000)
  - During auditing, a case was discovered where UTIS displayed delay for a road section with low traffic.
  - It was discovered that UTIS only collected 0 to 5 cases of traffic information while a video image vehicle detector collected 714 to 1,261 cases.

### Major Audit Cases

#### Selecting Subjects for Maintenance of Information System

- ❖ A government organization signed maintenance contracts with companies to operate and maintain 13,076 computing devices for 22 central government departments.
  - Since signing the contracts, the organization did not exclude the 359 **devices registered for disposal** from 2012 to 2014. This led to excessive provision of around 390 million won or the provision of the said amount is expected.
  - Even after classifying 164 devices for disposal in 2012, the organization included the said devices in the category of devices for maintenance in 2013 and 2014, resulting in excessive provision of around 540 million won or the provision of the said amount to be expected.
  - In 2013 and 2014, the organization calculated and recorded 24 devices for maintenance either twice or five times, resulting in excessive provision of around 1 billion won or the provision of the said amount to be expected.
  - In 2013, the organization included 9 devices that were decided to be sold in 2012 in the category of devices for maintenance, resulting in excessive provision of around 242.1 million won. In total, the organization has excessively provided a total of around 1.2 billion won and excessive provision of around 700 million won is expected.

### Major Audit Cases

#### Internal Control of Information System Operation

- ❖ An audited organization was using System A's database. When it came to managing changes in the database, the audited organization did not have a control system, such as recording people's access to the database when 26 were using a program called "Golden" to access it.
  - By using SQL plus, a database management tool, the system manager directly made modifications to computerized financial ledger, where financial transactions are recorded. However, he/she did not write causes for modifications in the ledger, resulting in a difficulty to identify the appropriateness of his/her modifications.
- ❖ 100 technicians in charge of operations management of System A's accounting database modified data in the database using an identical account to access the database.

## Background

### Originality of 'U-Check'

유척

- 'U-Chuck' is a ruler made from brass, and it aims at auditing local officials whether they perform their duties in fair ways on paying tribute, military, tax, etc.

## U-Check

- 'U-Check' is named after the brass ruler pronounced similar to Korean name "U-Chuck" .





## Background

- ❖ The use of computerized data in audit work has been increasing but only few auditors use the **data comparison method**.
- ❖ Specifically, the analysis of the data is requested to the institute, increasing **the load of auditing** and **causing risks of exposure of audit direction**.
- ❖ The EUROSAI members use **commercial software** (Germany, Norway, Czech Republic, Poland), or **self–developed software** (Switzerland, Poland).

## Background

- ❖ In 2012 and 2013, it developed “U-Check” in the Korean Windows OS through step 1~2 development and also conducted education and training within the BAI.
- ❖ Thereafter in 2016, it pursued the development of “U-Check” in the English Windows OS through Step 3 development in order to counteract globalization.

### Our Development Progress

- ▶ Oct. ~ Sep. 2012 : Program test development through the “IT utilization audit special unit Task Force” work
- ▶ Dec. 2011 ~ Jan. 2013 : Opinions on the education and usage of the program was determined(93% optimistic)
- ▶ Jan. ~ Feb. 2013 : Development of program function improvement and manual
- ▶ Sep. ~ Nov. 2016 : By translating the previous Korean program into English, the program will be globalized to be convenient to use in foreign public institutions

## Application Features and Functions

### Application Features

- ❖ ‘U–Check’ is based on MS Access, which has the ability to use simple methods to quickly handle variety of data
- ❖ The functions of MS Access that are often utilized in audit works are packaged so that the users can easily apply them
- ❖ However, the file format the MS Access uses to load is limited, so the program is improved to be able to load most of the other file formats

#### Excel

- Pros. : Different forms of data can be processed, user–friendly program
- Cons. : The speed of data processing is slow, data analysis can not be done for large sized data

#### Access

- Pros. : The data processing speed is fast and large file sized can be handled
- Cons.: Only DB format data can be analyzed, program is difficult to use

## Application Features and Functions

### Application Functions

- ❖ Data reliability check for high accuracy of the audit result is basically served by U–Check
  - To Check the validity of social security number, license maintenance number, corporation registration number that are often used in comparison data
  - To inspect for omission/duplication of unique numbers such as social security number or contract number
  - To provide descriptive statistics that will check whether the contract cost is a singular value
  - To Check whether the collected data are in the same form

## Application Features and Functions

### Application Functions

#### ❖ Conversion, analysis, and processing of collected data

- When most of the data of same form are collected from variety of auditees, the collected data is easily appended into one file.
- In order to meet the purpose of the analysis, the field form of the collected data is conversed (number↔letter↔date), or is being processed using the four fundamental arithmetic operations.
- Implementing criteria after mutually comparing based on “matching key” .
- The raw data are summarized and organized by tables and pictures to determine the work progress.

## Application Features and Functions

### Application Functions

#### ❖ Maintenance and security of the analysis results

- The raw data, analysis logic, and analysis result that are applied to the ideas that are remained during the auditing, are saved on different files so that knowledge accumulation and data sharing is possible(data backup).
- Intermediate analysis results and personal information are protected by the login(password given) and uninstall functions.

## Demonstrations

# Demonstrations

Thank you

