

# Cybersecurity Strategy in Japan

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# 3 Words to Bring Back from Today's Presentation



# 2. The Cybersecurity Strategy

**Overview of Today's Presentation** 

1. Historic Framework of Cybersecurity Policy: Before the Legislation of the Basic Act

2. The Legislation of the Basic Act on Cybersecurity: Explaining the Current Framework

3. Cybersecurity Strategy

4. Current Issues in Individual Topics

1. Historic Framework of Cybersecurity Policy: Before the Legislation of the Basic Act

- History of Cybersecurity Policy
- Recent Notable Cyberattacks/incidents

2. The Legislation of the Basic Act on Cybersecurity: Explaining the Current Framework

3. Cybersecurity Strategy

4. Current Issues in Individual Topics

# History of Cybersecurity Policy



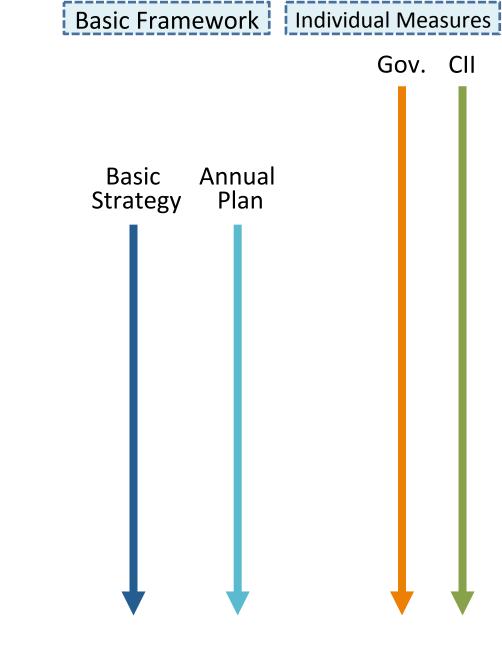
Defacement of Government Website (Jan. 2000)
IT Security Office (Feb. 2000-)

#### 2005: Launch

- National Information Security Center (Apr. 2005-)
- Information Security Policy Council (May 2005-)

#### 2015: Institutionalization

The Basic Act on Cybersecurity (Jan. 2015)
The Cybersecurity Strategy (Sep. 2015)



2016: We Are Here

# Recent Notable Cyberattacks/incidents

Complicated and sophisticated threat: both domestically and internationally
 Call for heightened level of cybersecurity framework

#### Domestic

- Mitsubishi Heavy Industries (Sep. 2011)
- Benesse Corp. (Jul. 2014)
- Japan Pension Service (Jun. 2015): Targeted Attack
- Several Gov. Agencies (Nov. 2015-): DDoS Attack
- JTB (Jun. 2016)

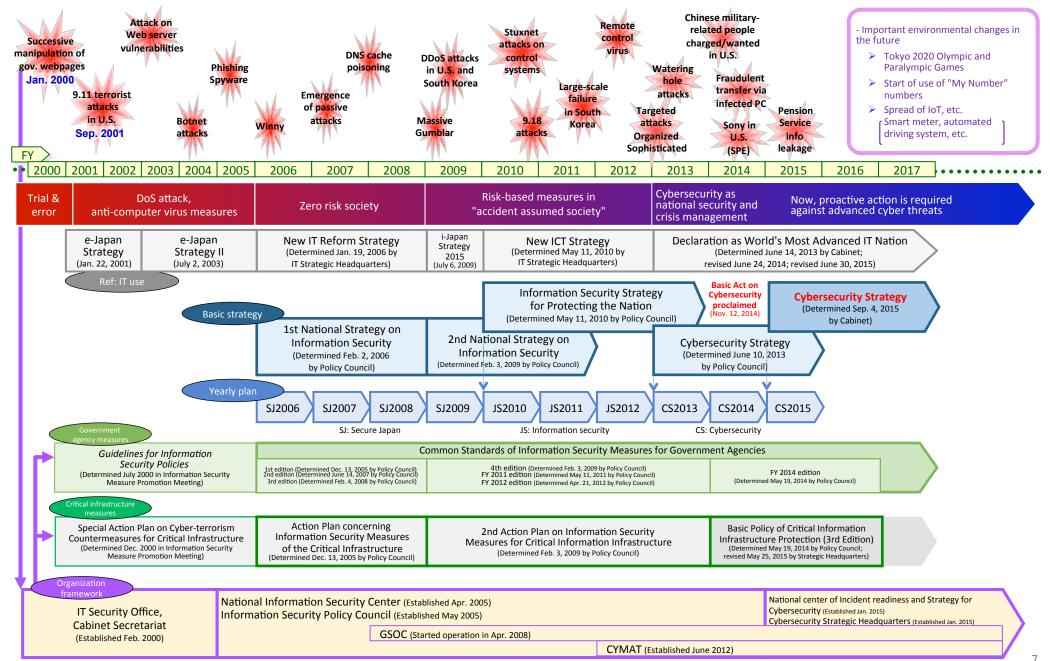
And more...

#### International

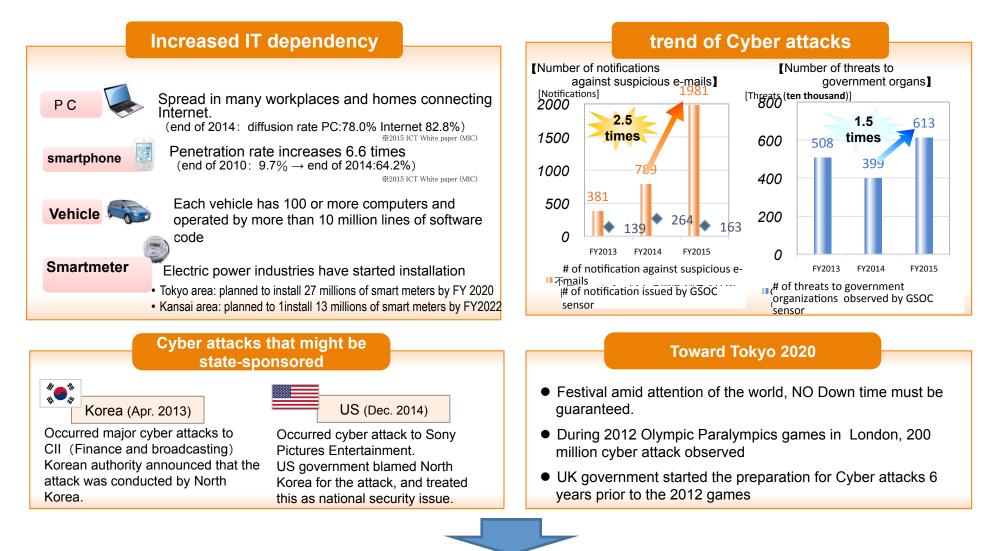
- Sony Pictures Entertainment (Nov. 2014)
- German Parliament (May 2015)
- U.S. Office of Personnel Management(OPM) (Jun. 2015)
- Ukraine Power Grid (Mar. 2016)
- World Anti-Doping Agency (WADA) (July 2016)

And more...

## **History of Cybersecurity Measures**



# Current situation of cybersecurity



For the response of cyber threat and more resilient cybersecurity,

the Basic Act on Cybersecurity is enacted and put into effect.

(Promulgated on 12<sup>th</sup> of Nov, 2014. Put into effect on the 9<sup>th</sup> of Jan. 2015)

NISC

# 1. Historic Framework of Cybersecurity Policy: Before the Legislation of the Basic Act

- 2. The Legislation of the Basic Act on Cybersecurity: Explaining the Current Framework
- Summary of the Basic Act
- Cybersecurity Headquarters
- Summary of NISC: Organization Chart; GSOC, Standards for Government, etc
- 3. Cybersecurity Strategy

4. Current Issues in Individual Topics

What is in the Provisions of the Basic Act?

- LEGAL definition of "Cybersecurity"
   ✓ Aims to describe common understanding of cybersecurity in legal language
- Basic Principle of Cybersecurity Policy
- Responsibilities of the Stakeholders
- National Gov.; Local Gov.; CII Operators; Business Entities; Educational/reserch organizations.

• The Cybersecurity Strategy

- The structure of the strategy
- ✓ Subject to Cabinet decision
- Basic Policy
- ✓ Security measures for National Gov.; CII Operators
- ✓ Governing policy in individual areas
- Cybersecurity Strategic Headquarters
- ✓ Composition of HQ
- ✓ Authorities of HQ
- ✓ Relation with other agencies

What has changed with the Basic Act?

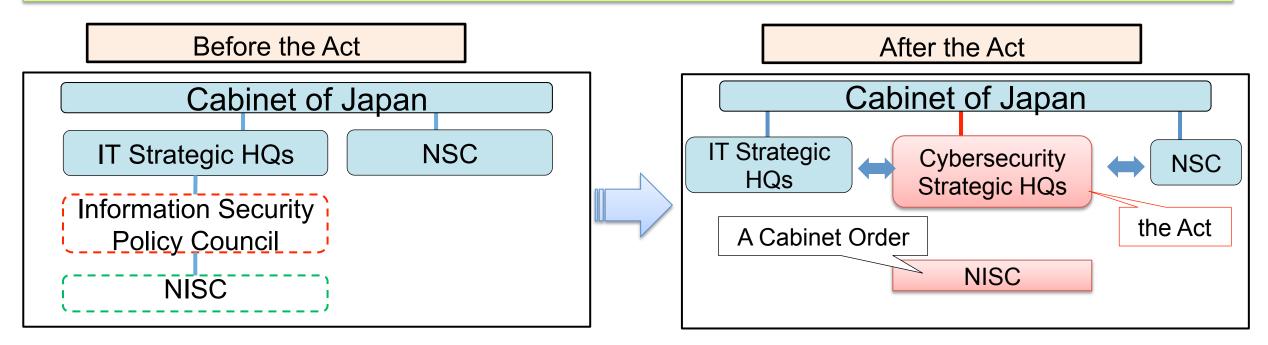
(1) Clear and Strengthened Legal Background of the Organization

(2) Strengthened Authority of HQ

(3) Status of the Cybersecurity Strategy

What has changed with the Basic Act?

(1) Clear and Strengthened Legal Background of the Organization



✓ Cybersecurity Strategic HQs as independent HQ

What has changed with the Basic Act?

(2) Strengthened Authorities of the HQ

Before the Act

 All the activities based on agreements with other governmental bodies

✓ Cybersecurity audit: Self Audit

✓ Incident analysis: NISC provides supports to other governmental bodies on request basis

#### After the Act

- Mandatory reports from other governmental bodies
   Send formal recommendation to other
  - governmental bodies
- ✓ Cybersecurity audit: 3rd Party Audit by NISC
  - Management audit
  - Penetration test
- Incident analysis: NISC has authority to conduct cause investigation in serious incidents

What has changed with the Basic Act?

(3) The Cybersecurity Strategy

Before the Act

 The Cybersecurity Strategy (June 2013)
 Adopted by the Information Security Policy Council



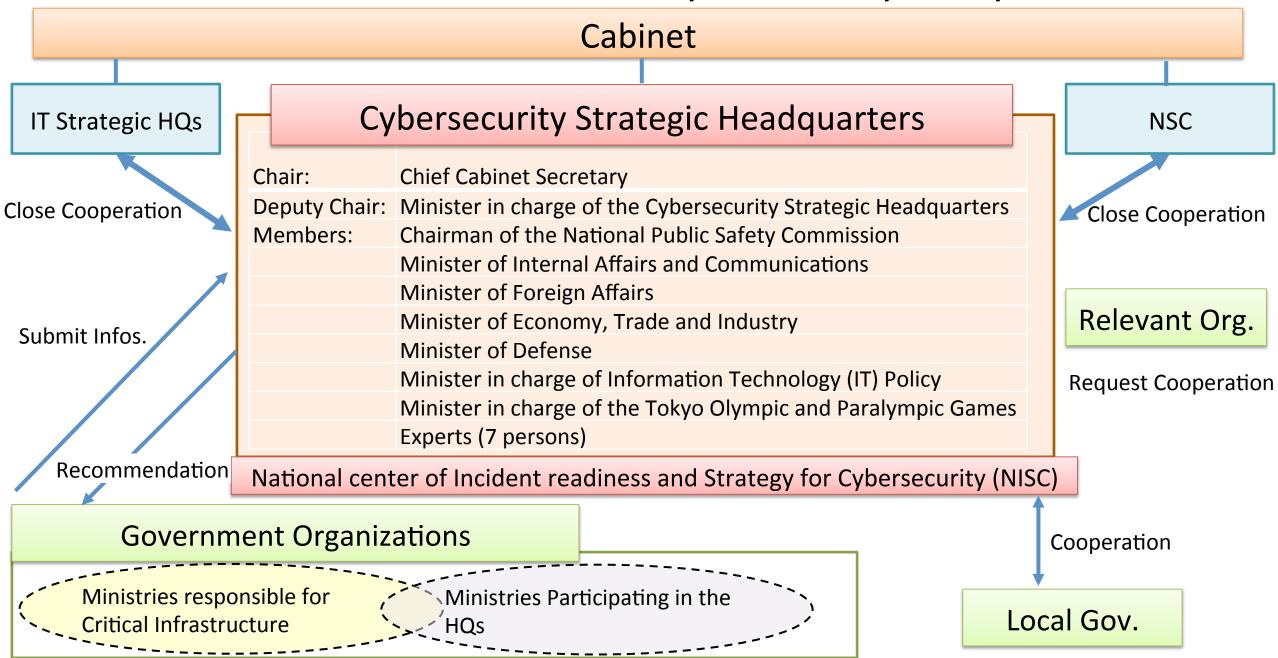
After the Act

The Cybersecurity Strategy (Sep. 2015)
Adopted as a Cabinet Decision
Reported to the National Parliament

 ✓ Binds only the member of the Council
 ✓ No authority to enforce the execution of the Strategy

- ✓ Binds ALL the Gov. Agencies
- ✓ The HQs may enforce the Strategy via authorities of mandatory reporting and formal recommendations

# **Current Framework of Cybersecurity Policy**



# Establishment of National center of Incident readiness and Strategy for Cybersecurity (NISC): Jan 9, 2015

#### **Cybersecurity Strategic Headquarters**

(General Manager: Chief Cabinet Secretary) Assistant Chief Cabinet Secretary takes charge of clerical work associated with the Cybersecurity Strategic Headquarters



#### National center of Incident readiness and Strategy for Cybersecurity

(Manager: Assistant Chief Cabinet Secretary (Responsible for SR&CM)

- National center of Incident readiness and Strategy for Cybersecurity is placed in charge of cleric work relating to:
- 1. Management of GSOC (\*1)
- 2. Cause investigations
- 3. Auditing and others
- 4. Cybersecurity related projects, planning, and general coordination





# 3 Words to Bring Back from Today's Presentation

1. "2015"

 ✓ "2015" is the year launching the current framework under The Basic Act on Cybersecurity

2. The Cybersecurity Strategy

3. "2020"

# 1. Historic Framework of Cybersecurity Policy: Before the Legislation of the Basic Act

2. The Legislation of the Basic Act on Cybersecurity: Explaining the Current Framework

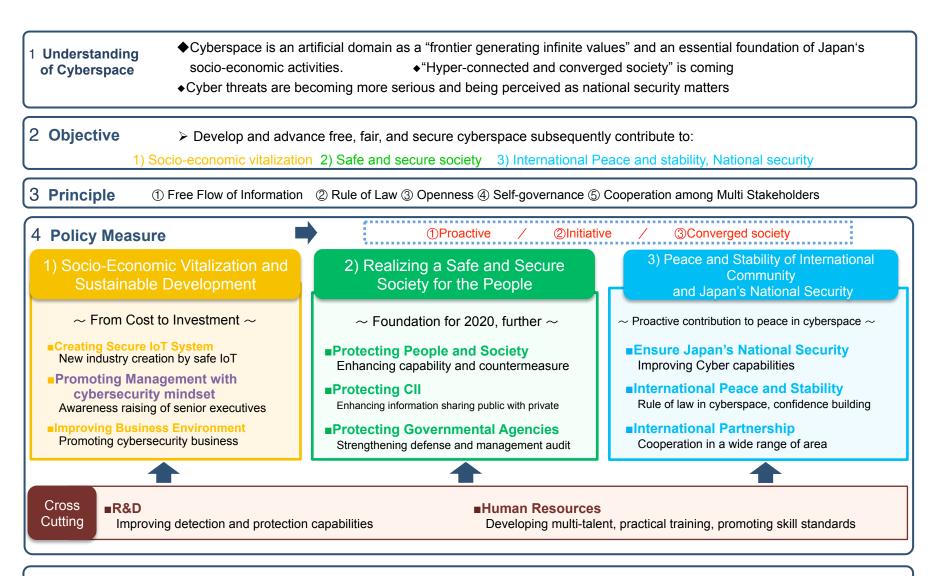
3. Cybersecurity Strategy

Framework of the StrategyAnnual Plan for FY2016

4. Current Issues in Individual Topics

# **Cybersecurity Strategy**

#### Below is the summary of the Cybersecurity Strategy. However, it is too SMALL to see...



5 Organization > Enhancement cooperation with public and private sector, Institution building toward the Tokyo Olympic and Paralympic Games in 2020

## Cybersecurity Strategy [Cabinet Decision, September 2015]

#### 1 Understanding of Cyberspace

- Cyberspace is an artificial domain as a "frontier generating infinite values" and an essential foundation of Japan's socio-economic activities.
- ♦ "Hyper-connected and converged society" is coming
- Cyber threats are becoming more serious and being perceived as national security matters

#### 2 **Objective**

- Develop and advance free, fair, and secure cyberspace subsequently contribute to:
   1) Socio-economic vitalization
  - 2) Safe and secure society
  - 3) International Peace and stability, National security

#### 3 Principle

① Free Flow of Information; ② Rule of Law; ③ Openness; ④ Self-governance; and ⑤ Cooperation among Multi Stakeholders

These sections established governing principle of cybersecurity policy

## Cybersecurity Strategy [Cabinet Decision, September 2015]



Cross Cutting	■R&D	Human Resources
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#### 5 **Organization**

Enhancement cooperation with public and private sector, Institution building toward the Tokyo Olympic and Paralympic Games in 2020



# 3 Words to Bring Back from Today's Presentation

1. "2015"

# 2. The Cybersecurity Strategy

✓ Japanese government adopted the Cybersecurity Strategy
 ✓ This strategy is setting leading policy and comprehensive framework

3. "2020"

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### 4. Current Issues in Individual Topics

- IoT: General Framework
- Expanding Scope of NISC: Pension case; Revision of the Basic Act; expand to Government Affiliated Agencies
- CIIP: Current Action Plan; Revision
- International Coordination: G7 WG, GGE
- Workforce/HR
- Toward Tokyo 2020

# Socio-Economic Vitalization and Sustainable Development

## Governing Principle: From Cost to Investment

#### Creating Secure IoT System

• New industry creation by safe IoT

#### Promoting Management with cybersecurity mindset

- Awareness raising of senior executives
  - ✓ Encouraging enterprises to report their cybersecurity efforts to the market
  - Supporting information sharing between the private and the public sectors, and within the private sector

#### Improving Business Environment

• Promoting cybersecurity business

# "General Framework for Secured IoT Systems", Aug. 2016 by

#### Determination of following items are essential to ensure IoT system security:

- a. Definitions (including the applicability and the scope) of IoT systems should be determined and clarified. Also, those systems should be categorized based on system characteristics reflecting their inherent risks and properly addressing those risks;
- b. Essential requirements for ensuring the users' safety should be determined, as well as confidentiality, integrity and the availability of information on IoT systems, including functions of devices;
- c. Requirements should be determined to ensure secured system operation and service resilience in case of a system failure, including mission assurance rules;
- d. Safety assurance standards, including statutory and customary requirements, should be determined for connected things and networks;
- e. Confidentiality, integrity, availability, and safety must be ensured in the case of mechanical failure or a cyber-attack, and swift service restoration in case of a system trouble should be clarified; and
- Responsibilities, boundaries and information ownership of IoT systems should be clarified.
   These items should be applied to the requirements for other cases such as interconnection of IoT systems.

"General Framework for Secured IoT Systems", established on 26th Aug. 2016 by NISC

Realizing a Safe and Secure Society for the People

## Governing Principle: Foundation for 2020, further

#### Protecting People and Society

• Enhancing capability and countermeasure

#### Protecting CII

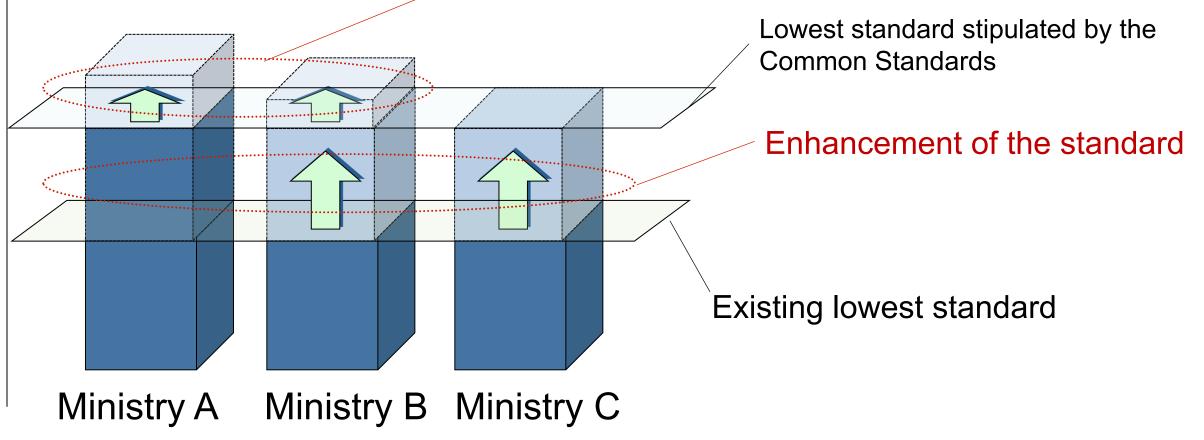
• Enhancing information sharing public with private

#### Protecting Governmental Agencies

• Strengthening defense and management audit

#### Common Standards (base line for governmental body security policies)

Depending on the decision of each ministry, measures of a higher standard than the Common Standards are taken



# Cyberattack against Japan Pension Service (May 2015)

- Personal data of 1.25 million people leaked following cyberattack
- Targeted attack was the method of cyberattack
- Cybersecurity Strategic Headquarters issued analysis of the incident in August 2015



Incident Handling Process and Procedures

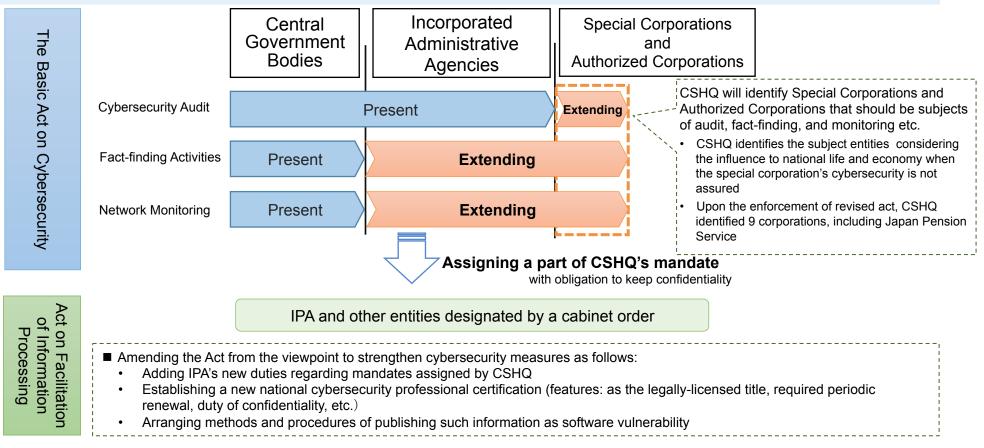
 ✓ Improving incident handling process and procedures Strengthening cybersecurity of the System

 ✓ Separation of system containing critical information from the Internet
 ✓ Aggregation of the Internet Access

#### Amendment of the Basic Act on Cybersecurity Basic Act

Based on the lessons learned in such cases as Japan Pension Service case, the Diet passed the draft amendment of the Basic Act on Cybersecurity and other related laws in order to drastically strengthen cybersecurity measures of government bodies & related organizations

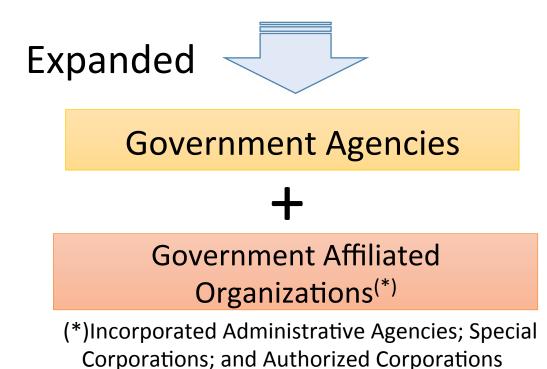
- Extending the scope of network monitoring, cybersecurity audit, and fact-finding activities
- Assigning a part of CSHQ's mandate to IPA and other entities



# Ideas behind the Revision of the Basic Act

### **Government Agencies**

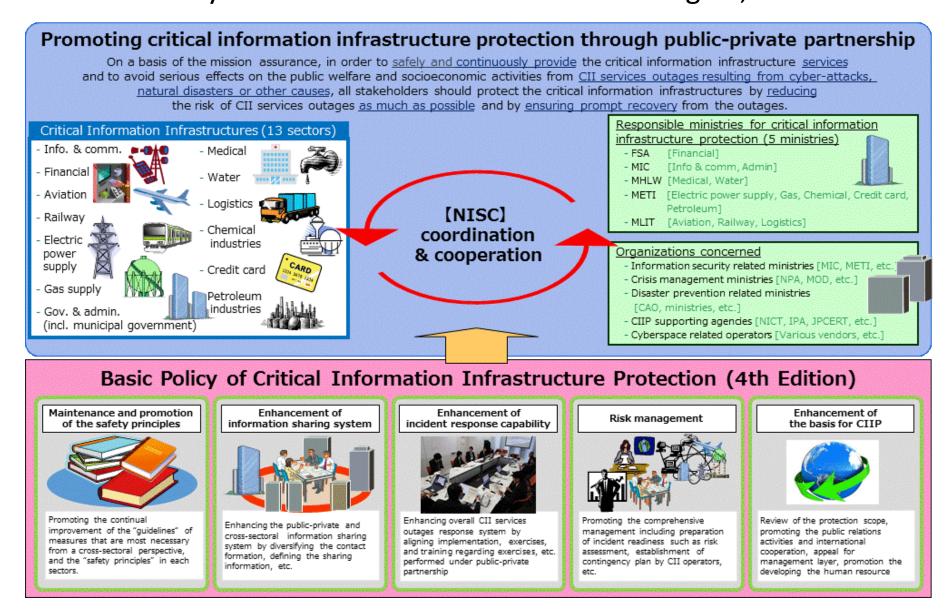
- ✓ Government will take direct measures to ensure cybersecurity
  - e.g. Network monitoring; audit



**Other Organizations** 

- Each organizations are expected take actions to ensure cybersecurity on a voluntary basis
- ✓ Government will assist them
- ✓ CII operators will be in a special framework

# Basic Policy of Critical Information Infrastructure Protection (4th Edition), is the summary of the CII Protection Framework. Again, it is too SMALL to see...



# Points of Basic Policy of Critical Information Infrastructure Protection

#### Critical Information Infrastructures: 13 Sectors

- 1. Information and Communications
- 2. Financial
- 3. Aviation
- 4. Railway
- 5. Electric Power
- 6. Gas
- 7. Government and Administrative Services (including municipal government)
- 8. Medical
- 9. Water

**10.Logistics** 

11.Chemical

12.Credit Card

13.Petreum

#### Role of NISC

 Coordination and Cooperation among stakeholders (Operators; Government agencies; industry organizations)

**Basic Policy** 

- Maintenance and promotion of safety principles
- Enhancement of information sharing system
- Enhancement of incident response capability
- Risk management
- Enhancement of basis for critical information infrastructure protection

#### **Purpose of "critical information infrastructure protection"**

In order to **safely and continuously provide** the critical information infrastructure services and to avoid serious effects on the public welfare and socioeconomic activities from **CII services outages resulting from cyber-attacks, natural disasters or other causes**, all stakeholders should protect the critical information infrastructures by **reducing** the risk of CII services outages **as much as possible and by ensuring prompt recovery** from the outages.

#### "Basic principles"

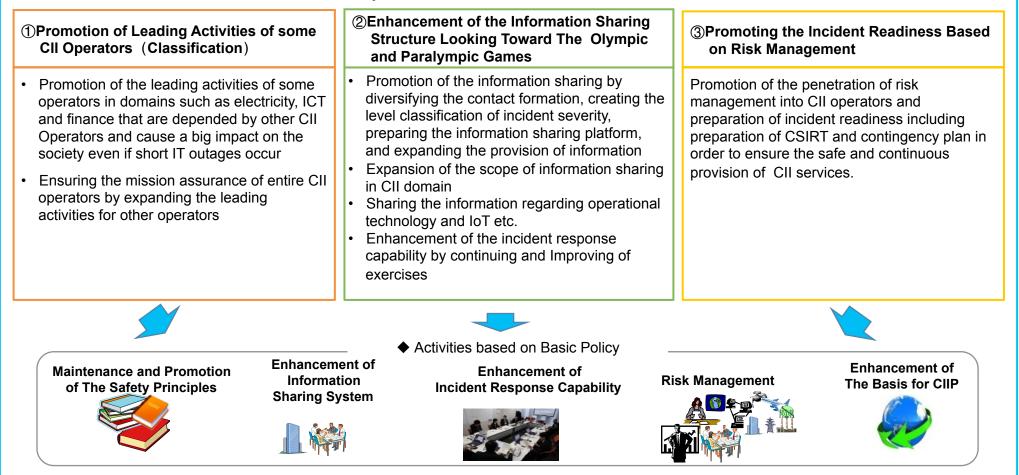
In the first place, critical information infrastructure operators should implement measures for critical information infrastructure protection on their own responsibility.

On a basis of mission assurance for all CII, the a sense of security should be nurtured among the public through CII protection activities in cooperation between Government and private sectors.

- The critical information infrastructure operators should respectively take measures and make effort for continuous improvement of those measures as entities providing services and bearing social responsibilities.
- Government organizations should provide necessary support for critical information infrastructure operators' activities for critical information infrastructure protection.
- Each critical information infrastructure operator should cooperate and coordinate with other stakeholders due to the limit of each operator's individual information security measures to address various threats.

#### **3**. Three Main Points of Review

Review 5 Activities based on the Basic Policy from 3 Main Points below



#### 4. Duration

Until 2020 Tokyo Games (Review will be summarized after the Games)

Peace and Stability of International Community and Japan's National Security

Governing Principle: Proactive contribution to peace in cyberspace

#### Ensure Japan's National Security

Improving Cyber capabilities

#### International Peace and Stability

• Rule of law in cyberspace, confidence building

#### International Partnership

• Cooperation in a wide range of area

#### Cyber space and International Law (GGE, June 2015)

*"In their use of ICTs, States must observe, among other principles of international law, State sovereignty, the settlement of disputes by peaceful measures, and non-intervention in the internal affairs of States."* 

"*Existing obligations under international law are applicable to State use of ICTs and States must comply with their obligations to respect and protect human rights and fundamental freedoms.*"

"States must not use proxies to commit internationally wrongful acts using ICTs, and should seek to ensure that their territory is not used by non-State actors to commit such acts."

"The UN should play a leading role in promoting dialogue on the security of ICTs in their use by States, and in developing common understandings on the application of international law and norms, rules and principles for responsible State behavior."

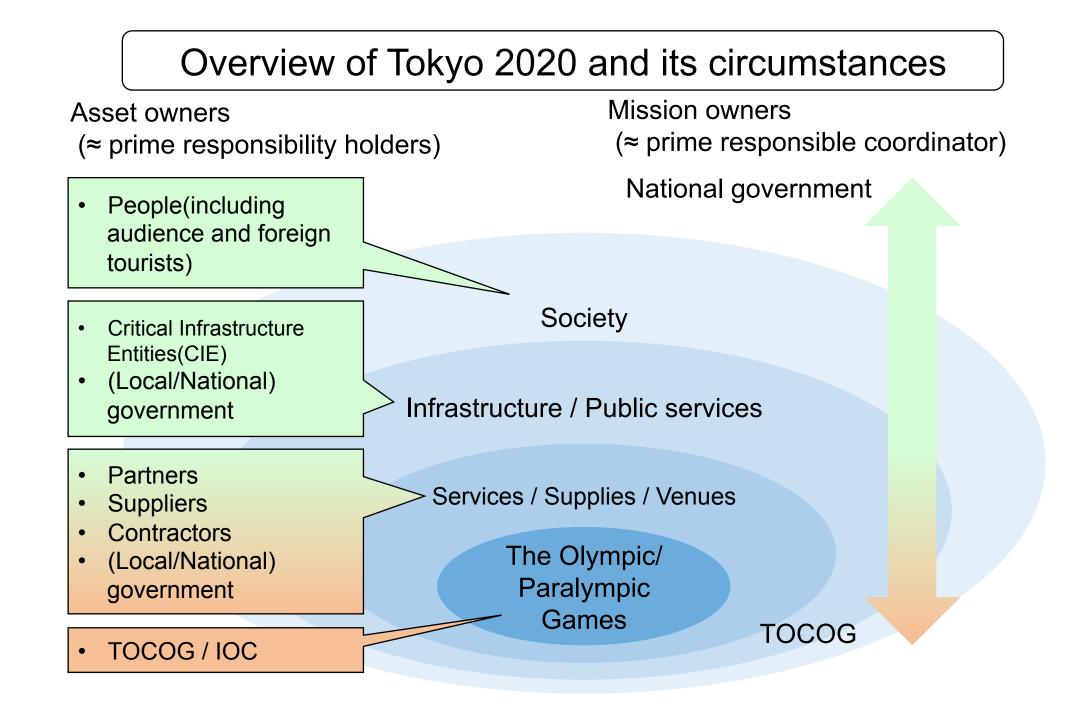
#### G7 Ise-Shima Summit (May 2016)

- G7 leaders reaffirmed basic principles on cyberspace and endorsed the G7 Principles and Actions on Cyber as an annex document to promote and protect an open, interoperable, reliable and secure cyberspace.
- G7 leaders decided to establish a new G7 working group on cyber to enhance policy coordination and practical cooperation among G7 countries to promote security and stability in cyberspace.

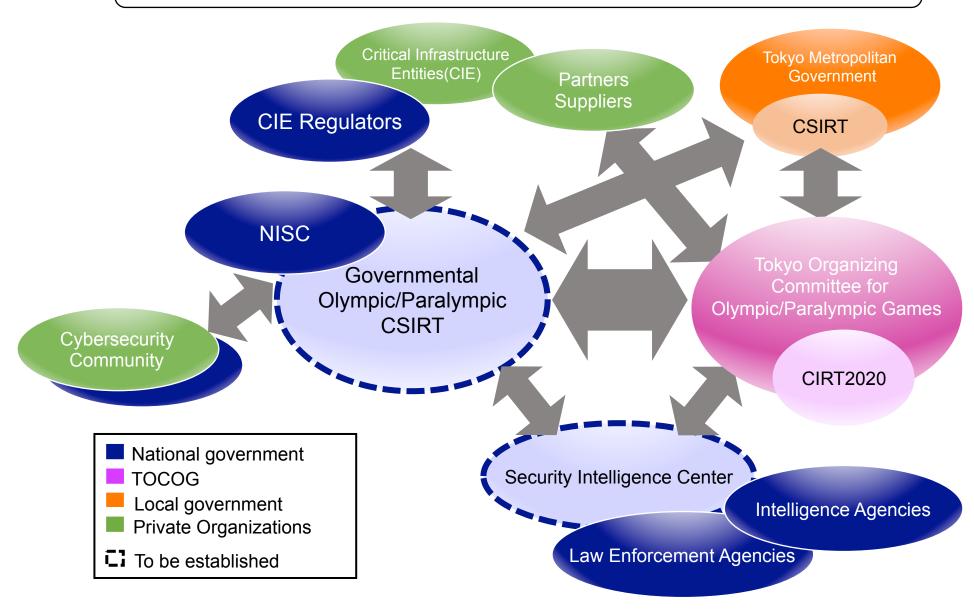


G7 Ise-Shima Leaders' Declaration on Cyber (summary)

- ✓ To take decisive and robust measures in <u>close cooperation against malicious use of cyberspace</u>
- ✓ To reaffirm that <u>no country should conduct or knowingly support ICT-enabled theft of intellectual</u> property, including trade secrets or other confidential business information
- $\checkmark$  To reaffirm that international law is applicable in cyberspace.
- ✓ To promote <u>a strategic framework of international cyber stability</u> consisting of:
  - The applicability of existing international law to state behavior in cyberspace,
  - The promotion of voluntary norms of responsible state behavior during peacetime, and
  - The development and the implementation of practical cyber <u>CBMs</u>
- ✓ To promote <u>a multi-stakeholder approach to Internet governance</u>



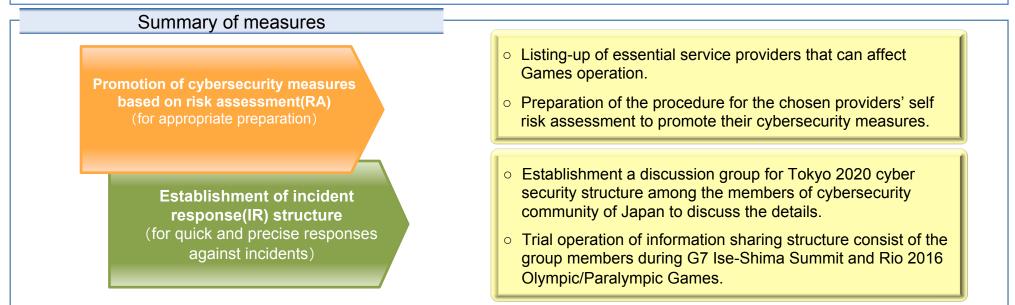
# Cybersecurity stakeholders of Tokyo 2020



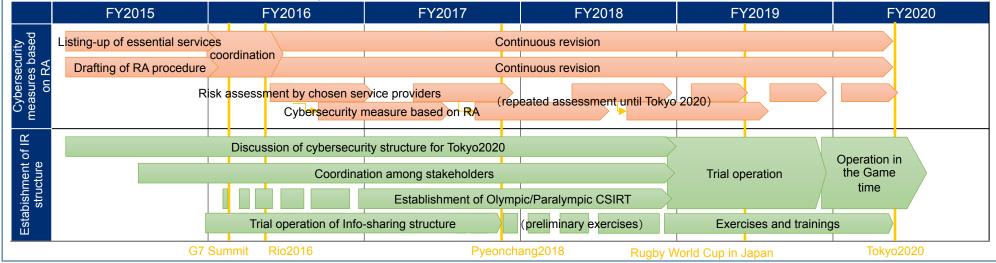
#### Cybersecurity Measures for Tokyo 2020 Olympic/Paralympic Games



Government of Japan promotes cybersecurity measures of essential service providers for the Games based on risk assessment and discusses to establish Governmental Olympic/Paralympic CSIRT as a core organization of information sharing among stake holders.



#### Schedule for Tokyo 2020



#### Risk assessment for Tokyo 2020 Olympic/Paralympic Games

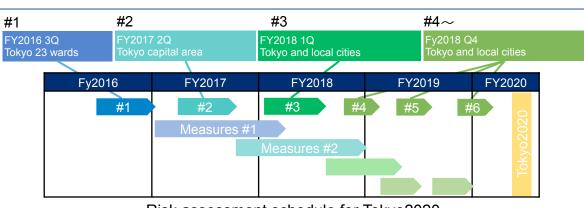


- Based on London2012's practices, NISC promotes risk assessment for continuous and safe provision of essential services for Tokyo 2020.
- NISC requested service providers that can affect the Games' operation to perform their self assessment in the explanation meeting.

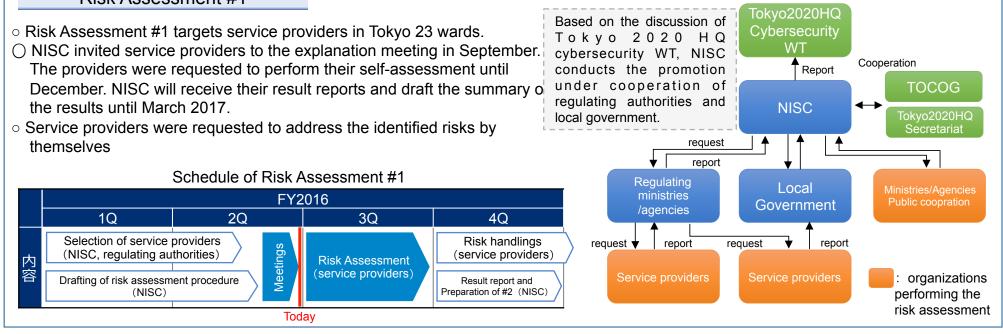
#### Abstract

- NISC provided the procedure to identify, analyze and assess security risks to promote risk management.
- Based on regulators' cooperation, NISC identified essential service providers that can affect Games operation, and requested them to perform the assessment.
- Several assessments are planned until 2020.
  - Expanding of service providers
  - Brushing-up of the procedure and risk scenarios

#### Risk Assessment #1



Risk assessment schedule for Tokyo2020



# 3 Words to Bring Back from Today's Presentation

1. "2015"

2. The Cybersecurity Strategy

✓ "2020" is the target year for each policy
 ✓ Human resource, CII protection is important issues in FY2016

# Fishing using "Kakkoii!!" contents

**"Kakkoii!!" means "Wow it's cool!!" in Japanese.** An important factor for young people to decide their future direction

- In our "New information security public awareness raising program"
- Utilization of media familiar to the public
- As a way to appeal to every citizen, attention should be paid to the influence of media (comics, songs etc.) familiar to the public, and efforts in collaboration with businesses and creators dealing with these are also expected to be effective.

# Raising Awareness is important, too.

#### Annual Cybersecurity Month 2017 (2/1-3/18)



2017 Cybersecurity Campaign.

#### "Sword Art Online the Movie"

Story of security and VR/AR death game. Story of hero and heroine who rescue prisoners.

There are many fans in young generation and gamers.

Slogans in posters are

"We protect this world(Internet)!" "Be a guardian of the future!"

#### **Enjoying Pokémon GO Safely!**



Attention Reminding of "Pokémon GO '

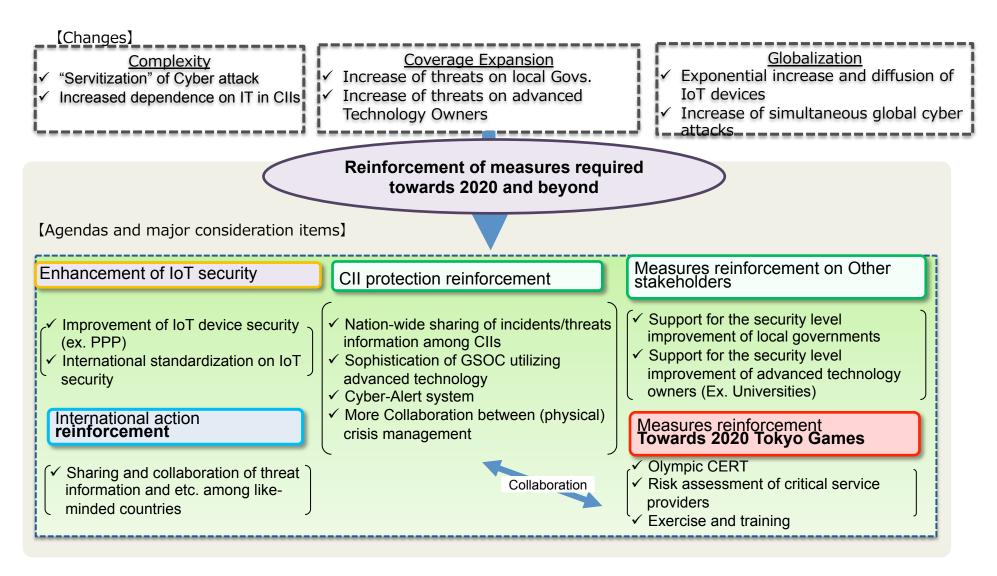
Published just before the release of the game!

In order to enjoy the games safely especially during summer vacation

Sensational response just after the release (No.1 "♡" @twitter in JAPAN)

このチラシは改変をしない範囲で、印刷 配布などに自由にお使いください。

#### **Consideration on Cybersecurity Policy towards 2020 and beyond**



[Schedule] This summer Work Policy decided at Cybersecurity HQ by Next summer Measures implementation

# End of Presentation

Thank you for listening !

# Please ask me if you have any questions.



National center of Incident readiness and Strategy for Cybersecurity