Graduate Schools Collaboration for Practical Security Skill and Knowledge

July 17, 2012
Institute of Information Security (IISEC)

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Agenda

- IT Specialist Promotion Program in Japan: **ISS Square** and **IT Keys** for *“IT Security Specialists”*
- What’s achieved by ISS Square and IT Keys
- What’s Next? ***PSSK***

  from *“IT Security Specialists”* to *“IT Security for IT Practitioners in wide-variety of industry”*
- Wrap-up

Information Security Education in Japan, so far

- University: Undergraduate Schools
  - Most are "Information Security Literacy" programs, very few for Information Security Core programs
- University: Graduate Schools
  - Only a few Security programs, not full-set of course programs

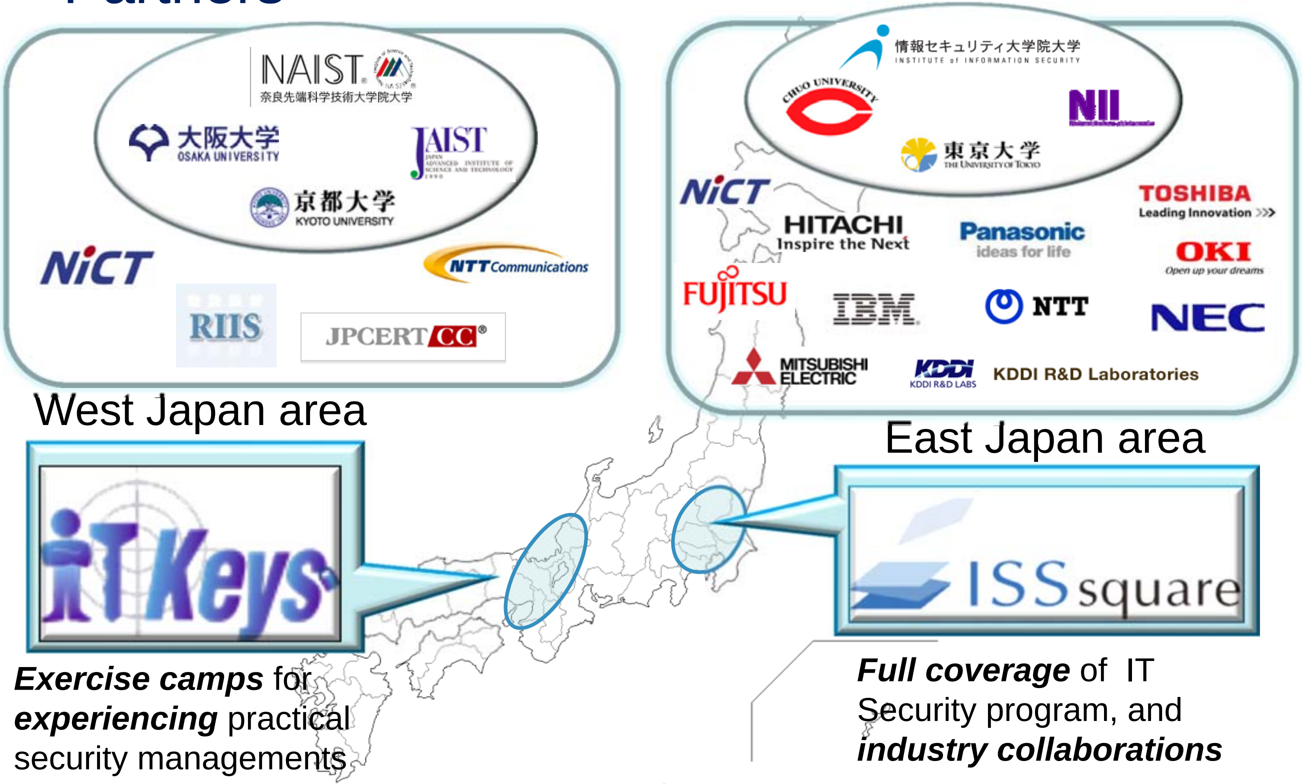
⇒"IT Specialist Promotion Program for Security"
to meet the industry requirements (2007～today)

- Enterprises
  - In-house training courses
  - Seminar programs by JNSA and others
  - Oversea Training courses

IT Specialist Promotion Programs for ***Security***

- "*ISS Square*" in east Japan, "*IT Keys*" in west Japan, aiming to educate ***"Top-level Security Specialists"*** in graduate school programs.
- Designed as ***Industry-Academia Collaboration and Networking***
  - 8 universities from Academia
  - 15 enterprises and NPOs from Industry
  - Human networking among all university faculties and students
- Conducted by MEXT Japan
  - Four fiscal years funding from mid 2007 to 2011 March
  - *From 2011 April, both ISS Square and IT Keys continue* ***by their own efforts****.*

Core Members and Industry Partners


NAIST 奈良先端科学技術大学院大学
大阪大学 OSAKA UNIVERSITY
JAIST
京都大学 KYOTO UNIVERSITY
NICT
NTT Communications
RIIS
JPCERT CC
情報セキュリティ大学院大学 INSTITUTE of INFORMATION SECURITY
CHUO UNIVERSITY
NII
東京大学 THE UNIVERSITY OF TOKYO
NICT
HITACHI Inspire the Next
Panasonic ideas for life
TOSHIBA Leading Innovation
OKI Open up your dreams
FUJITSU
IBM
NTT
NEC
MITSUBISHI ELECTRIC
KDDI KDDI R&D LABS
KDDI R&D Laboratories
iT Keys
ISS square

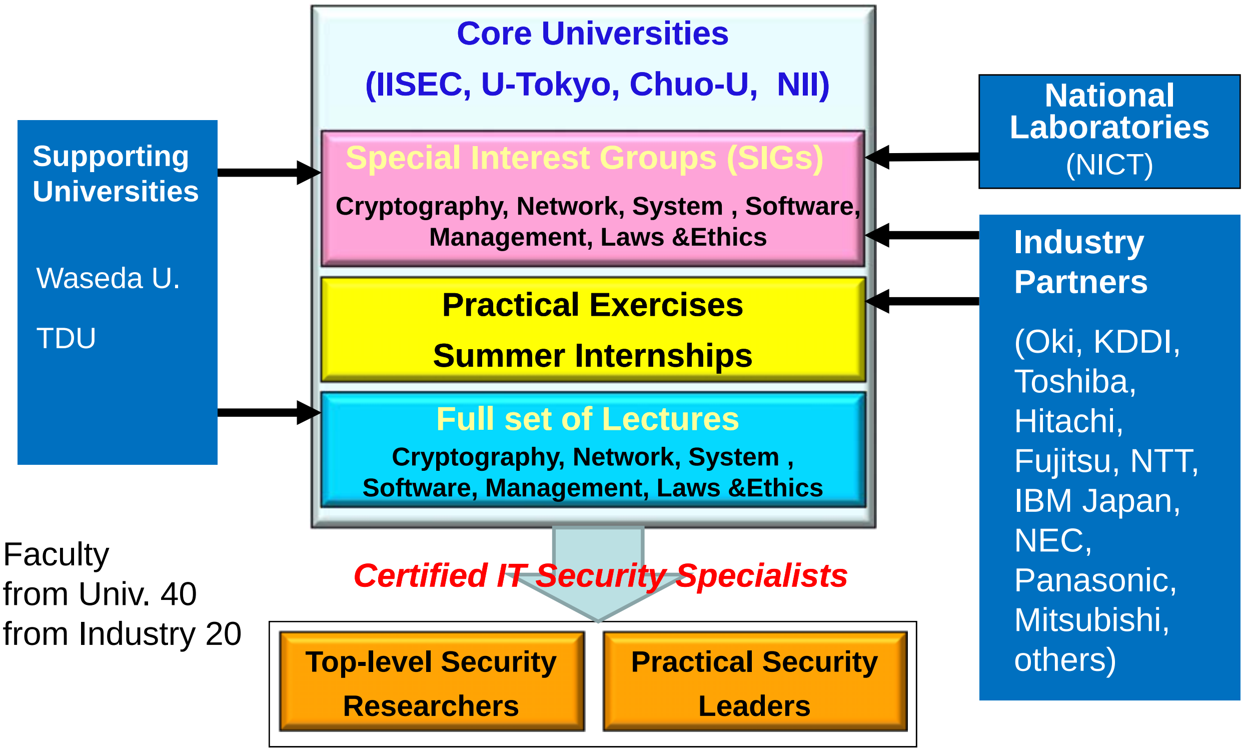
West Japan area

East Japan area

Exercise camps for ***experiencing*** practical security managements

Full coverage of IT Security program, and ***industry collaborations***

Program Structure in ISS Square



Core Universities

(IISEC, U-Tokyo, Chuo-U, NII)

Special Interest Groups (SIGs)

Cryptography, Network, System , Software, Management, Laws &Ethics

Practical Exercises

Summer Internships

Full set of Lectures

Cryptography, Network, System , Software, Management, Laws &Ethics

Supporting Universities

Waseda U.

TDU

National Laboratories
(NICT)

Industry Partners

(Oki, KDDI, Toshiba, Hitachi, Fujitsu, NTT, IBM Japan, NEC, Panasonic, Mitsubishi, others)

Certified IT Security Specialists

Top-level Security Researchers

Practical Security Leaders

Faculty
from Univ. 40
from Industry 20

Featured Program in ISS Square

- Full set of lectures for “IT Security Body of Knowledge”
  - with Special lecture series (available for IT Keys members via video conference systems)
- Special Interesting Groups (SIGs) for 6 areas
  - Cryptography, Network security, System security, Software security, Security management, Laws & Ethics for security
- Practical exercises in “Camp” ***(thanks to IT Keys)***
  - IT crisis management
  - IT risk management
  - System attacking, intrusion vs. protection, and others
- Internship at the partner companies and overseas

Practical Exercise by IT Keys: IT Crisis Management

- Learn “Internal behavior” of real Malwares by “catch and touch”
- Learn how to provide countermeasures against system and network vulnerability

thanks to

- Telecom ISAC Japan
- CCC (Cyber Clean Center)
- JPCERT/CC
- NTT Communications,
- IPA and others

Internship at industries and overseas

- Summer Internship at the partner companies and organizations
  - NTT Labs, KDDI Labs, IBM, JPCERT/CC, Hitachi, Oki, NEC, Fujitsu and Fujitsu Labs, Toshiba and others
- Oversea training course at Royal Holloway, University of London (RHUL), UK.

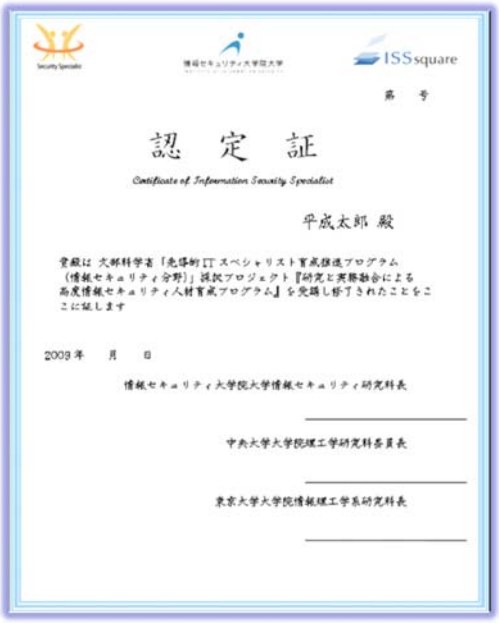
Information Security Specialist Certificate (ISSC)

ISS Square certificate conditions :

- Research : SIG activities, Symposium Presentation
- ISS Specified Course Program
- Exercises
- Personal Requisites

and

- Master Degree in each graduate school


Security Specialist
情報セキュリティ大学院大学
ISS square

第　号

認　定　証

Certificate of Information Security Specialist

平成太郎 殿

貴殿は 文部科学省「先導的ITスペシャリスト育成推進プログラム（情報セキュリティ分野）」採択プロジェクト『研究と実務融合による高度情報セキュリティ人材育成プログラム』を受講し修了されたことをここに証します

2009年　月　日

情報セキュリティ大学院大学情報セキュリティ研究科長

中央大学大学院理工学研究科委員長

東京大学大学院情報理工学系研究科長

Security Specialist

ISS square

ISS Square Certificate Results

Year	April 2008 ～ Mar 2009		April 2009 ～ Mar 2010		April 2010 ～Mar 2011		April 2011 ～Mar 2012	
Registered	59		95		83		64	
	M1	M2	M1	M2	M1	M2	M1	M2
	45	14	51	44	**34**	49	31	**33**
Certified	12		39		45		**33**	

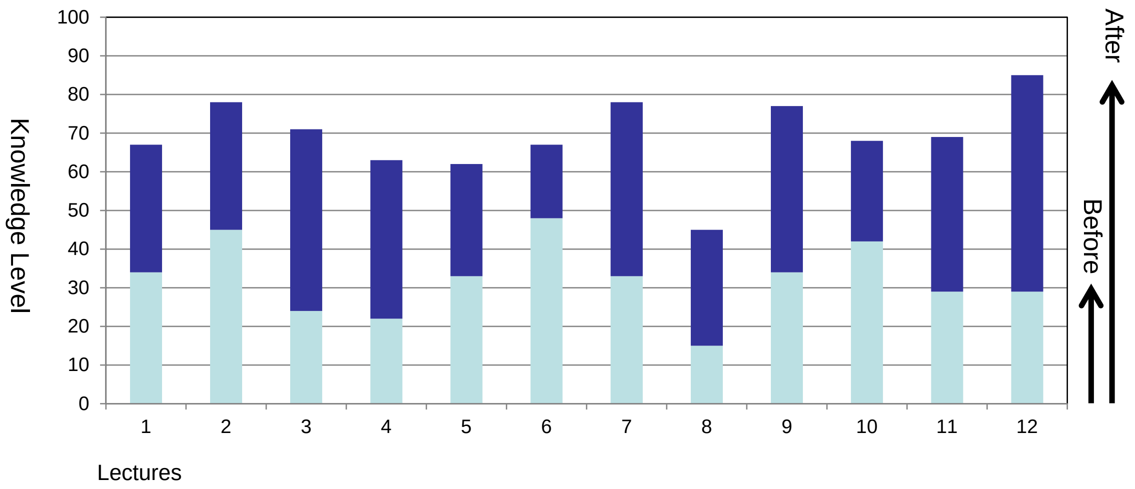
Basically 2 year program

What's achieved through ***IT Specialist Promotion Programs***,
ISS Square and IT Keys

EVALUATION

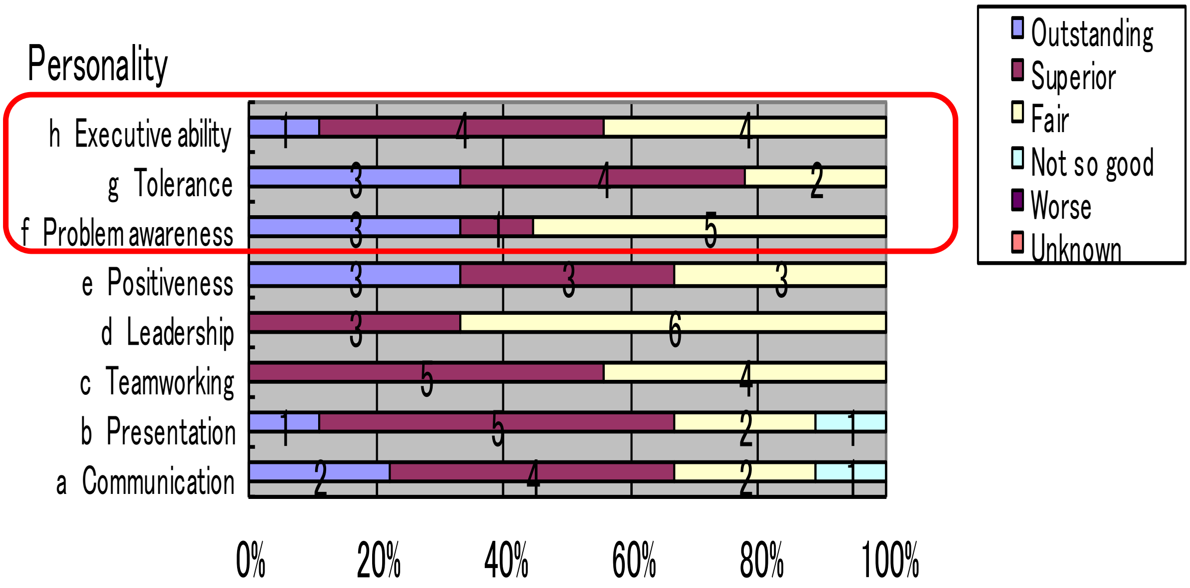
Preliminary Evaluation by Students

Knowledge Acquisition by ISS Square Lectures

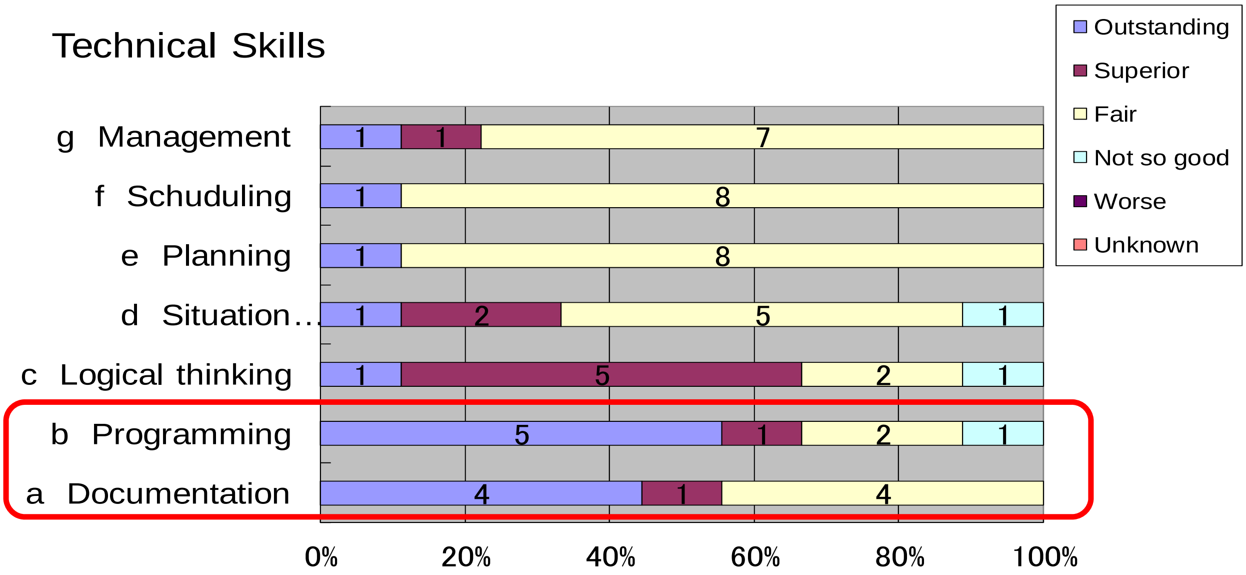


Preliminary Evaluation by Industry

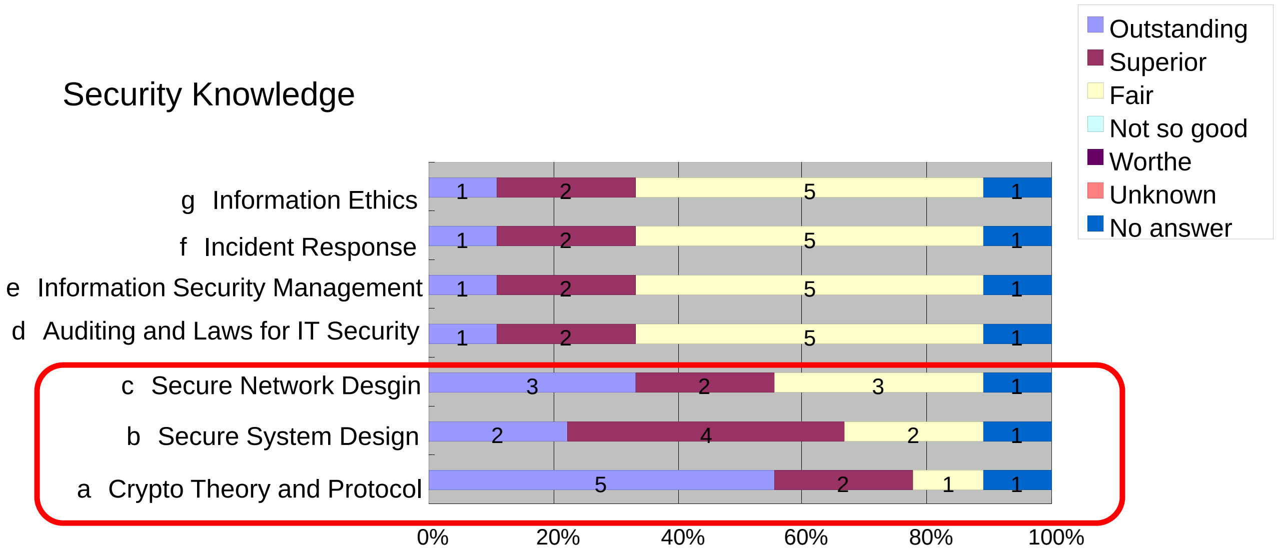
- a questionnaire survey for companies where the certified graduates start working



Preliminary Evaluation by Industry 2



Preliminary Evaluation by Industry 3

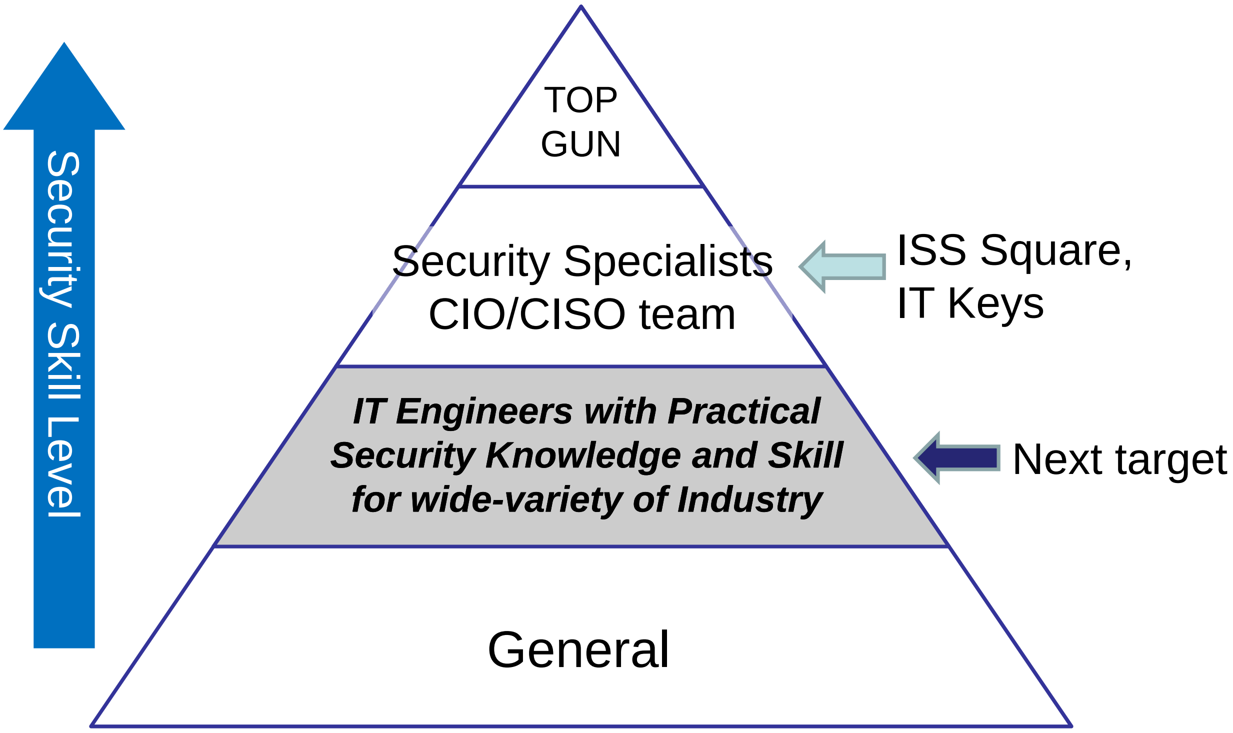


By Japanese Government

Targeting to educate IT engineers with practical security knowledge and skill for wide-variety of industry

WHAT’S NEXT?

Who we should target



Security Skill Level

TOP GUN

Security Specialists
CIO/CISO team

ISS Square,
IT Keys

IT Engineers with Practical Security Knowledge and Skill for wide-variety of Industry

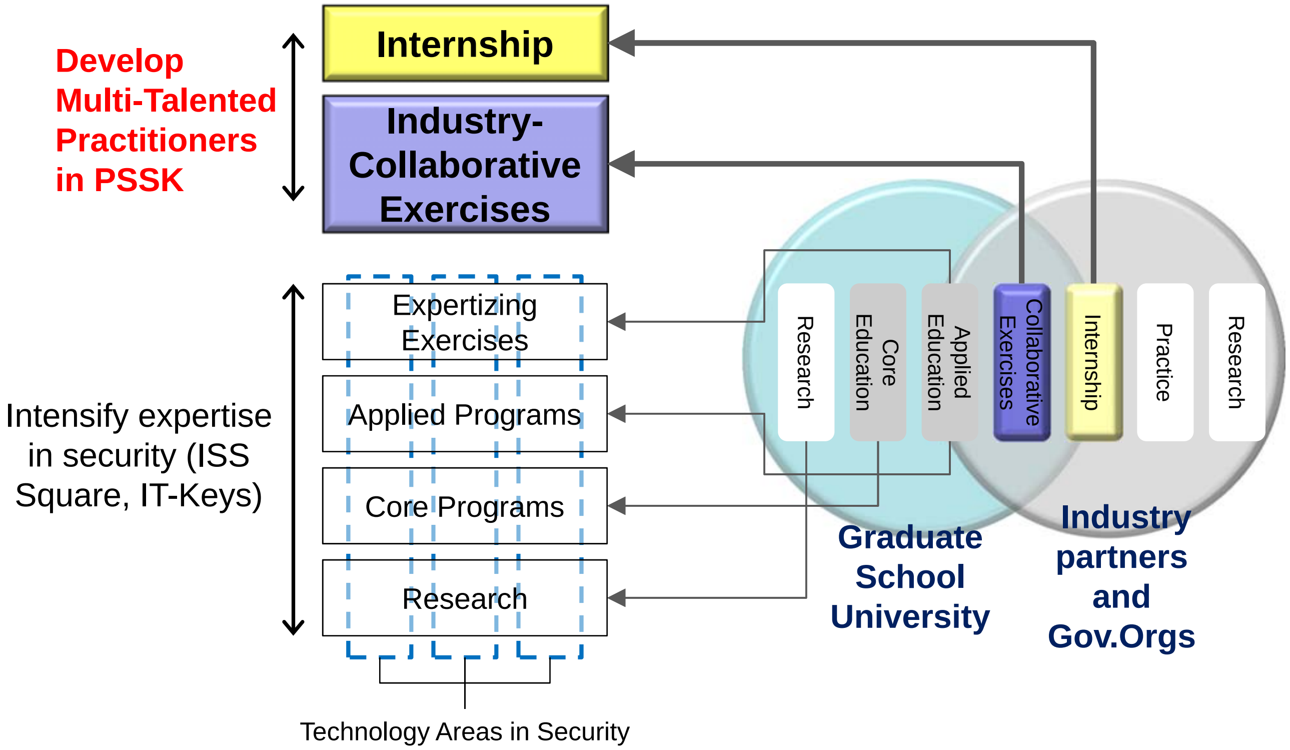
Next target

General

“***PSSK***” Practical Security Skill and Knowledge program

- *Target:* ***IT Engineers with Practical Security Knowledge and Skill for wide-variety of Industry***
- *Goal : IT Security Certificate valuable for both graduate students and industry*
  - For graduates: advantageous in job hunting activity
  - For industry: effective and efficient measures in recruiting processes

What kind of Education in PSSK?



Develop Multi-Talented Practitioners in PSSK

Internship

Industry-Collaborative Exercises

Intensify expertise in security (ISS Square, IT-Keys)

Expertizing Exercises

Applied Programs

Core Programs

Research

Technology Areas in Security

Research

Core Education

Applied Education

Collaborative Exercises

Internship

Practice

Research

Graduate School University

Industry partners and Gov.Orgs

PSSK Special Features

- ***Intensive exercises*** for practical security skill and knowledge
  - Joint development ***with industry partners***
  - ***Technology*** oriented and ***social science*** oriented exercises
  - ***Short-term***(3 days to 1 week) ***intensive exercises*** using specially designed training facilities
  - Symposium, workshops, and ***CTF-like events*** for encouraging face-to-face meetings and team workings experiences
- ***Internship*** in industry including “IT users”
  - Not only security vendors but ***wide variety of industry***
  - Summer internship (3-4 weeks) and long-term(6mo+) internship

PSSK Intensive Security Exercise Program: planned

明日の信頼を創ろう。
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Social science oriented	Integrated Risk Management	Information Security Auditing
	IT Systems Crisis Management	Legal issues in IT Systems Forensics
Technology oriented	Cryptography and Authentication Implementation and Protocol	IT Systems Operation Literacy
	Secure Programming	Malware Analysis
	Network Systems Security	Security Attacks and Incident Response
	Physical Network Security and Wireless LAN Security	

Expanding Collaboration Networks in PSSK

明日の信頼を創ろう。
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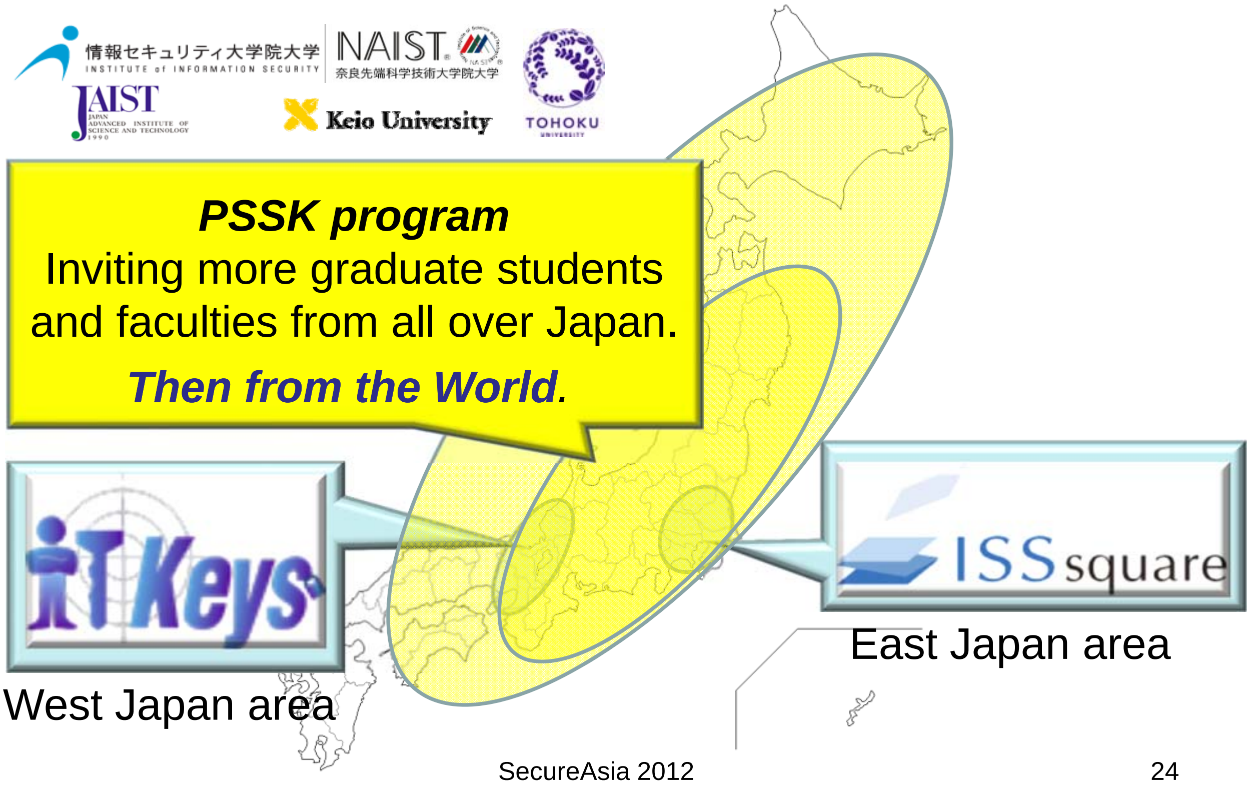
NAIST 奈良先端科学技術大学院大学
JAIST JAPAN ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY 1990
Keio University
TOHOKU UNIVERSITY



PSSK program
Inviting more graduate students and faculties from all over Japan.
Then from the World.

WRAP-UP

Wrap-ups

- ISS Square and IT Keys have been successful
  - 320+ graduates have been certified as “***IT Security Specialists***”
  - Industry and public sectors evaluate ***very high*** on the programs
- More needs from wide-variety of industry and society
  - *More practitioners*
  - *More graduates*
  - *More multi-talented*

- New education programs ***PSSK*** is NOW expected!

THANK YOU !