

3-3 Developing Security Human Resources for Acquiring Practical Skills in Critical Infrastructures



Research and development on the development of security human resources

Targeted Human Resources

Engineers (OT) who are engaged in operation of critical infrastructure or other key resources

Development Goal

- Development of human resources who are capable of acting while being aware of security in their operations.
- Able to understand what security means
- Able to be constantly aware of security
- Able to contribute to actions and measures
- Able to communicate with security experts



Development details

(i) Research and development on curriculum

Detailed review of teaching content

(ii) Research and development on lectures and exercise materials

Development of lecture and exercise materials and establishment of guidelines for teaching

(iii) Research and development on the E-Learning System

Establishment of materials that enables flexible way of learning

(iv) Research and development on a security related community function

Provision of a support mechanism for instructor communities
Establishment of a mechanism for updating teaching materials

(1) Novelty

Goal: Operation engineers (OT) are able to understand the explanation of security personnel (IT) and report an incident when it occurs

Teaching methods are provided as teaching guideline.

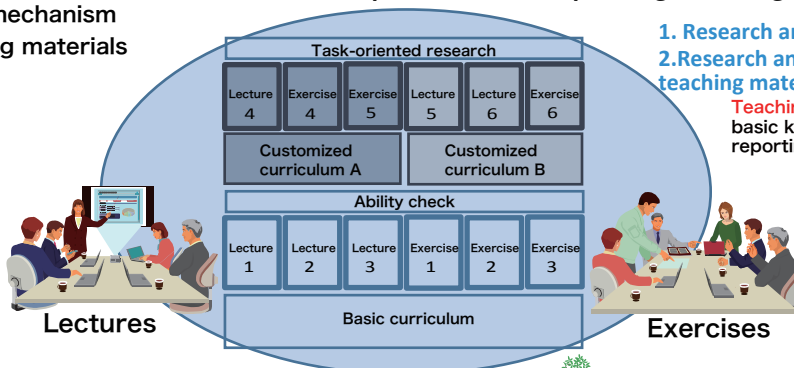


(2) Practicality

- Extensive distribution of teaching materials (collection of opinions and improvement)
- Enabling of many instructors to engage in development of human resources (teaching guidelines)
- Customization in accordance with individual environment (customized manuals)
- Formation of instructors' communities
- Information sharing and establishment of update processes for updating teaching materials



Textbooks



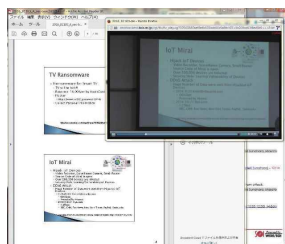
1. Research and development on curriculums
2. Research and development on exercise and teaching materials

Teaching guidelines including awareness, basic knowledge, actions, measures, and reporting



Exercise of experiencing incidents (ransomware)

Mechanism of updating curriculums and teaching materials



e-learning

3. e-learning system

Flexible learning environment
Grasp of progress

4. community

Exchange of latest information
Self-learning environment
Update of teaching materials



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Outcomes

(1) Current Level of Achievement

Teaching materials have started being distributed and the trail of specific human resource development is underway.

Based on opinions obtained through these steps, the teaching materials are being updated.

The teaching materials have been distributed to about 40 organizations.

Development of human resources is in progress in the organizations where the teaching materials have been distributed.

Hands-on exercise - Exercise courses are provided in Institute of Information Security and Keio University.

(2) To be Achieved

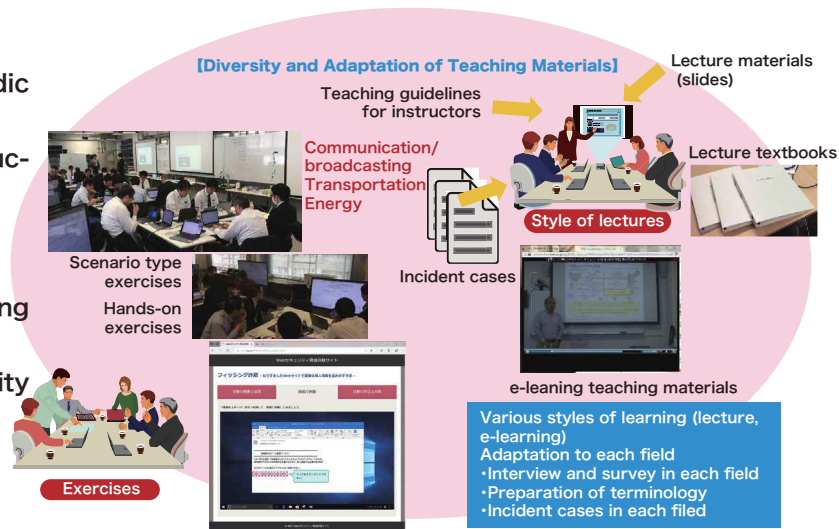
Establishment of a system for periodic update based on developed materials

Formation of the community of instructors

Information sharing in the community and update of the teaching materials

Commercialization by the implementing organization

Function as the core of the community of instructors



Practical Application and Commercialization of Research Themes

(1) Status of Activities

Educational programs using the teaching materials are planned to be commercialized.

Also, a community of instructors in the organizations where the teaching materials are used will be formed, and at the same time, a sustainable system will be established for the use of teaching materials, information sharing, and update of teaching materials.

Especially for the update of teaching materials, we will establish a system for continual updating through collaboration with not only the implementing organizations but also government institutions including NISC, industry organizations in each field including ISAC, and industry collaboration organizations or other institutions including JNSA and CRIC-CSF.

(2) Challenge for Commercialization

There are a variety of development targets for human resources, which requires effective education programs to be formulated for such versatile targets. It should be possible that these education programs are widely rolled out, centered on the community formed in this research and development.

(3) Action Policies and Future Plan

After trials conducted in FY2019, operation will be started in the implementing organization from FY2020.

