

Research on Global Communication Security based on Wisdom Software

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【Outline of survey】

We will design global network security systems based on wisdom software. Our systems will incorporate monitoring tools that monitor each computer and device chip and that cooperate with each other for detecting intrusions. We will also automatically generate intrusion rules by designing a data-mining tool of the monitoring log. In addition, we will realize human security using many sensor chips, so we will create new network services in the background of the secure communication.

In our project, we will achieve the following developments.

- Cooperative and super-distributed network security software for monitoring devices and detecting intrusion.
- Data-mining software for large-scale monitoring logs.
- Human-security software using sensor chips based on the above environment.

【Expected results】

In this project, we will integrate some research results, including distributed processing that applies multi-agent technology, detecting intrusion in the network security, and the data-mining technology that can discover useful rules from among a large amount of data. We will thus be able to establish a new security mechanism that can secure WAN-level systems; we can then use the network without considering safety or limiting its use by a fire wall. In addition, by establishing these security mechanisms, we will be able to provide an environment that leads to new network services.

【References by the principal researcher】

- GMAL: An Logic Programming Language for the Inter Process Communication in Distributed Environment: Wataru Yamazaki, Hiroyuki Nishiyama and Fumio Mizoguchi, Journal of Japan Society for Software Science and Technology, Vol21, No.5, pp.49-64, 2004. (in Japanese)
- Network Security System based on Immunity: Fumio Mizoguchi and Hiroyuki Nishiyama, Journal of Japan Society for Software Science and Technology, Vol.20, No.3, pp.88-94, 2003. (in Japanese)

【Term of project】 FY 2005 - 2008

【Budget allocation】 41,000,000 yen

【Homepage address】 <http://mizo-www.ia.noda.tus.ac.jp/>