ABSTRACT

Information is a very important asset for a company, so important that it needed a security mechanism with the ultimate purpose to ensure data confidentiality from unauthorized access, also to ensure data integrity and to ensure data availability. Security is closely related with risks. Risk is the net negative impact of the exercise of vulnerability, considering both the probability and the impact of occurrence. This final project will provides a foundation for the development of an effective risk management program for assessing and mitigating risk identified within IT systems. The ultimate goal is to help company to better manage IT-related mission risks. In addition, this final project provides information on the selection of cost-effective security controls. These controls can be used to mitigate risk for the better protection of mission-critical information and the IT systems that process, store, and carry this information.

Alongside to risk management, this final project will also include designing of an application system which functions as a real-time network Intrusion Detection System as a support system for computer network security system at NIIT & Telkom Bandung. Most of the current networks Intrusion Detection Systems can only detect various kinds of attack but they can not take any further actions. The systems also don't have any interactivity with the administrator while the administrator is away from duty. This is considered to be ineffective especially when the system is in critical condition. The designed security system will have the ability to detect any suspicious network activity, also to take further actions in handling the attacks, and to interact with the administrator using two-way Short Message Service.

The result of the research shows that from the estimation of information security system risk level, it is found that the ALE caused by interruption to computer security system is Rp 63.600.000. The assets decrease of the computer security system can be anticipated by implementing computer network Intrusion Detection System at NTC Bandung. This will ease the network administrator to maintain the company's computer network security condition in real time and unlimited to the administrator's location.

Keyword: Risk management, information system security, ISO 17799