

Total Security Solution “DIGUARD”

Authors: Akihiro Takeda*, Masato Matsuoka* and Koichi Sasakawa*

1. Introduction

Security measures tend to become more complicated and advanced in order to create a secure and safe society and maintain corporate competitiveness. The Mitsubishi Electric Group offers a higher level of security management such as integrated management with video surveillance and access control and analysis of multiple different security system logs, etc. by systematizing physical security such as access control and video surveillance and information security such as file encryption and network security, as well as sharing ID information, history information, etc. among systems.

2. Security Technology Trend and Needs

Since the 9/11 attacks in the US, work on crisis management has been accelerated worldwide. In Japan, security products are needed that include fast, accurate biometric authentication technology, image format for high-definition and long video recording, low-error detection image processing technology, and a system that integrates them all. However, security systems typically cost more to manage and maintain (approx. 80%) than the initial cost (approx. 17%) for design and construction in terms of ratio concerning its life cycle cost (LCC)⁽¹⁾. Therefore, an increasing number of users are requesting total support ranging from system construction to consultation for formulating operation policies and guidelines as well as maintenance and operation management.

3. Mitsubishi Electric Total Security Solution “DIGUARD”

3.1 Total Security Solution “DIGUARD” Achieved by “DIGUARD NET”

For constructing the “DIGUARD NET” security

system integration platform, Mitsubishi Electric has done the following: (1) fixed Mitsubishi own communication protocol, (2) specified the data format such as ID information and history information, and (3) systematized the interface at which the system functions are invoked, to create a highly secure total system by combining an access control system, video surveillance system, file encryption and authorization management system, etc. to share ID information and history information among systems (Figure 1). This platform can also be linked with an attendance management system and building facilities such as elevators, air conditioners, lighting, etc. to achieve more efficient management and energy conservation. In addition, the platform can ensure remote monitoring and control of the status of each system through a wide-area network to provide rapid maintenance in case of faults and operation management service. The next report gives technical details of “DIGUARD NET.”

3.2 Security Business Strategy Using “DIGUARD”

As described in Sec. 1 of the Chapter 3, urgent maintenance in case of a fault and an operation management system in which surveillance video is gathered by a network and the system operation status and log are analyzed statistically and reported, are effective for security maintenance and operation. The life cycle of the security system is divided into four phases: (1) design, (2) installation, (3) operation, and (4) renewal (Figure 2).

In the “DIGUARD” security solution, “DIGUARD NET” is used in the design, installation, and operation phases to:

- Speed up installation during construction and re-

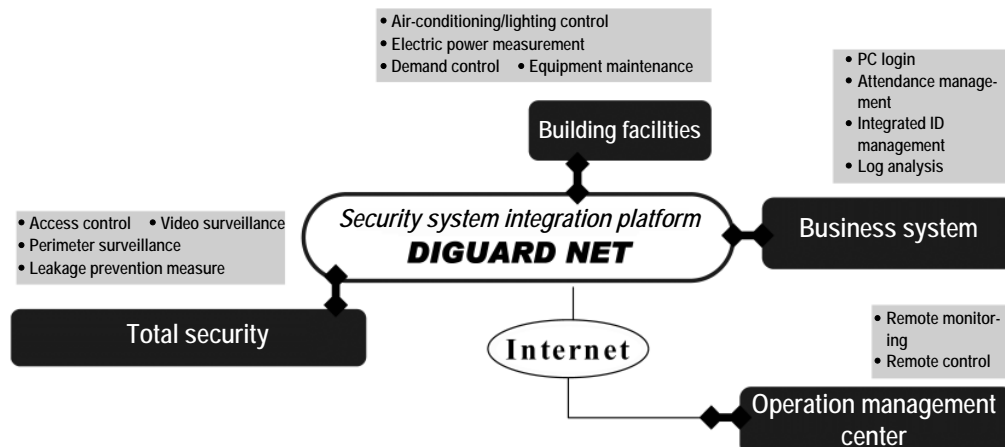


Fig. 1 Creation of a total system through DIGUARD NET

newal, and maintain the reduction of work hours (SI cost)

- Extend the stable operation period and reduce the operating cost by providing operation management service.

In the life cycle from system construction to operation and management, it helps maintain the security level (Figure 3).

4. Example of Constructing Total Security Solution “DIGUARD” System

This section explains the typical patterns and their functions (Table 1).

- (A) Easy-to-operate security through integrated management such as access control and video surveillance
 - Access control history information and gathered videos are cross-checked to promptly detect accidents and incidents such as illegal access.
- (B) Prevention of information leakage through linkage between the access control system and application

terminal

- For the prevention of information leakage, only the person who has the access history in the access control system is permitted to log on to the PC.
- (C) Optimum control of air conditioning and lighting using attribute information and number of people during entry/exit
- Optimum control of air conditioning and lighting is performed based on the attribute information and the number of persons who have entered the room to maximize security, comfort and energy conservation.

5. Conclusion

This paper described the concept of “DIGUARD,” the new total security solution from the Mitsubishi Electric Group and its business strategy. In future, we intend to apply this solution to large-scale systems and system groups using a wide-area network, study the improvement of maintenance and operation management service, and commercialize this solution.

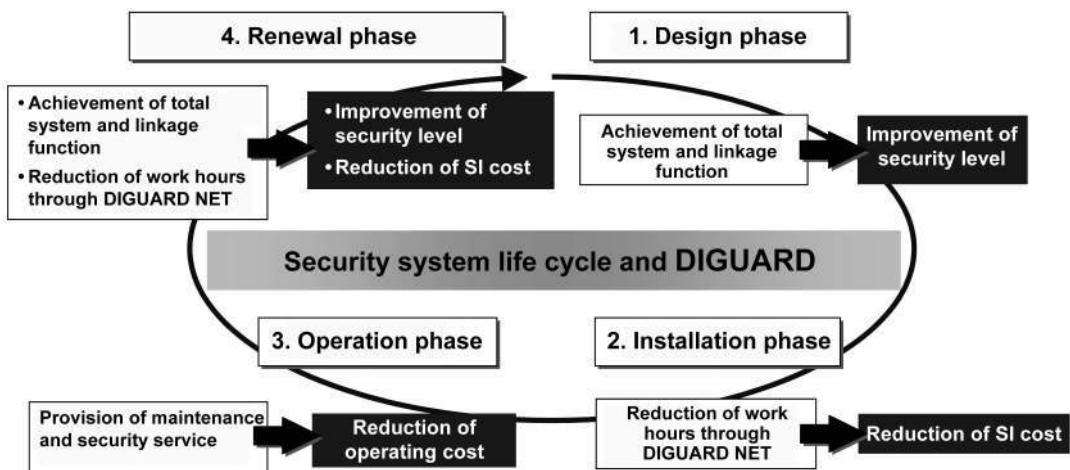


Fig. 2 Security system life cycle and DIGUARD

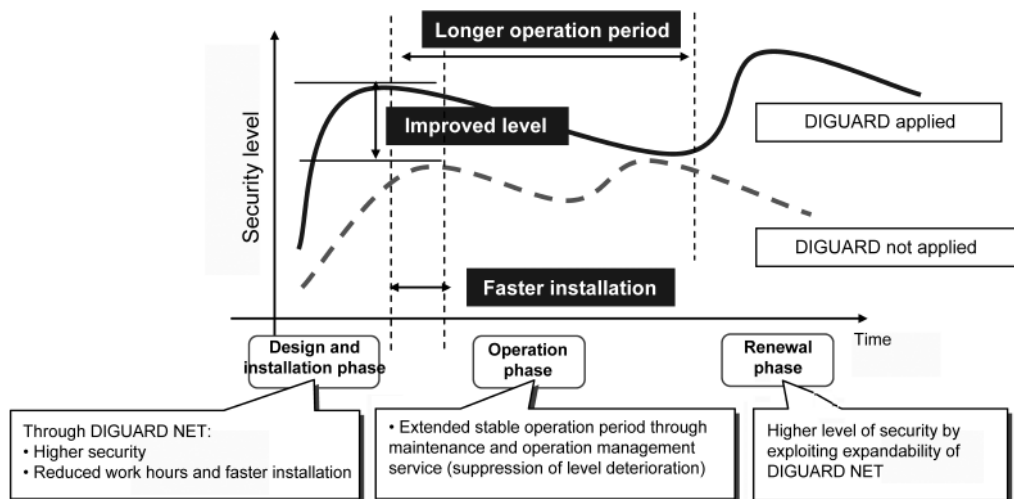


Fig. 3 Application and security level of DIGUARD

References

- (1) "Life Cycle Costs-chart"
<http://www.nikkenn-kann.com/pdf/lcc.pdf>, 2001
- (2) Mitsubishi Electric Technical Report Feature
 "Physical Security," Vol. 78, No. 8, August 2004

Table 1 Combination of systems and achieved functions

Linkage pattern/achieved function		A	B	C
System combination		Easy-to-operate integrated security management through linkage between access history and surveillance video	Prevention of information leakage through automatic log off from application terminal using access control information	Optimum control of air conditioning and lighting using ID and attribute information items and the number of persons during entry/exit
Security	Video surveillance	○		
	Access control	○	○	○
Business system	Integrated ID management, work management, and application PC		○	
Building facilities	Air conditioning, lighting, and elevator			○