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SURVEY RESULTS

INTEGRATED ALARM ANNUNCIATION AND ENTRY CONTROL SYSTEMS

**John J. Clever
Lester H. Arakaki
Faye M. Monaco
LuAnne E. Juarros
Security Technology Department 9538
and
Gilbert R. Quintana
Insider Technology Department 9545**

**Sandia National Laboratories
Albuquerque, New Mexico 87185-5800**

Abstract

This report provides information and analyses of data obtained from a survey of producers of integrated alarm annunciation and entry control systems.

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1. MANAGEMENT OVERVIEW

1.1 INTRODUCTION

This report provides the results and analyses of a detailed survey undertaken in Summer 1993 to address integrated intrusion detection alarm annunciation and entry control system issues. This survey was undertaken as a first attempt toward beginning to answer questions about integrated systems and commercial capabilities to meet or partially meet U.S. Department of Energy (DOE) site needs.

1.2 SYSTEM CONSIDERATIONS

The elements of detection, assessment, communication, delay and response are integral parts of an effective, total safeguards system. Two major systems approaches historically have been treated as separate issues:

1. *Intrusion Detection Alarm Systems.* In this type of system, the emphasis is directed toward the detection and assessment of intrusion alarms in sufficient time to allow effective response.
2. *Access (Entry/Exit) Control Systems.* In this type of system, the emphasis is directed toward such issues as:
 - Assuring that only those persons authorized access to an area are actually allowed admittance.
 - Preventing the introduction of items which constitute contraband, including items usable for purposes of sabotage.
 - Preventing physical theft of sensitive information and material.

In the 1990's, commercial vendors increasingly have recognized that these systems are complementary and capable of some level of integration. However, the extent to which integration has been achieved to date has not been documented. This survey report addresses issues of integrated system functionality.

1.3 REPORT COMPOSITION

This survey report consists of this management overview section and three other sections:

- Section 2 - Surveyed Firms and Systems. This section provides an overview of the various firms participating in the survey, together with synopsis information on the systems they reported.

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- Section 3 - Analyses of Survey Results. This section provides frequency graphs and other analyses of the various survey parameters.
- Section 4 - Survey Detail Tables. This section provides a complete listing of the survey responses for each system reported.

1.4 REPORT VALIDITY

The data in this survey report have not been formally evaluated. Although every effort was made to encourage survey participants to be candid and truthful in their answers, the validity of individual responses has not been formally determined. This does not mean that the data cannot be used. However, it is suggested that direct comparisons among vendors be avoided since the data are not appropriate for normalization.

1.5 SOME SUGGESTED USES FOR REPORT DATA

The report is designed to allow several possible uses:

- **Generic Comparisons.** As noted above, the data cannot be normalized and have not been formally verified. However, Section 3 provides appropriate parameter frequency and other statistical analyses, while Section 4 has the individual system details. It is feasible to examine a given system detail and compare it to the overall frequency distribution. Thus, if inspection of Section 4 shows that a system does not offer a desired feature, it may be appropriate to examine the overall frequency distribution to determine whether this is a feature which is routinely offered by many other vendors.
- **Detailed Capabilities.** The report also provides a compendium of detailed capabilities. This can potentially allow users to determine more rapidly those systems which have specific capabilities needed by the user site.
- **Baseline for Further Detailed Analysis.** The survey results imply that there are several systems which will meet DOE and other Federal needs in whole or in part. This can serve as a baseline from which to select systems for detailed analysis and testing. Only a hands-on evaluation can determine the accuracy of the submitted data and address some of the human factors considerations. For example, questions exist such as whether the operator's interface is easy to understand, consistent, responsive, and able to be used with only minimal operator fatigue. Similarly, the question of whether a given system provides all of the necessary functionality for operators, maintainers, testers, managers and other users can only be answered through detailed evaluation of the specific system in question.

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2. SURVEYED FIRMS AND SYSTEMS

This section provides narrative summaries concerning the products of firms that responded to this survey. It also contains listings of firms which, for reasons detailed later, were not included in this survey.

2.1 FIRMS/PRODUCTS INCLUDED IN THIS SURVEY

Table 2.1 lists the firms that completed survey forms concerning their product(s) for inclusion in this survey.

Table 2.1	
FIRMS PARTICIPATING IN SURVEY	
Firm Name	Address
Assessment and Control International, Incorporated	2285 Franklin Rd. Bloomfield Hills, MI 48302
Asset Control Systems	744 NW 4th St. PO Box 1917 Corvallis, OR 97330
Campbell Engineering Company	2540 Bates Avenue, Concord, CA 95420
Control Systems International	PO Box 59469 Dallas, TX 75229
DAQ Electronics Incorporated	252 Lackland Drive East Middlesex, NJ 08846
DSX Access Systems Incorporated	12021 Plano Road Suite 190 Dallas, TX 75243
Edicon Systems Division	300 Canal View Boulevard Rochester, NY 14623
ENSEC Incorporated	2600 North Military Trail Suite 290 Boca Raton, FL 33431
Epic Data	7280 River Road Richmond, British Columbia, Canada, V6X1X5
Hirsch Electronics Corporation	1751 Langley Avenue Irvine, CA 92714
Logiplex Corporation	5221 Southwest Corbett PO Box 3428 Portland, OR 97208
MARTEK / Scientific Approaches	Suite 1100 50 West Broadway PO Box 2936 Salt Lake City, UT 84110

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Table 2.1 FIRMS PARTICIPATING IN SURVEY (Continued)	
Firm Name	Address
Monitor Dynamics Incorporated	9518 9th Street Rancho Cucamonga, CA
Mosler Inc.	415 Hamburg Turnpike Wayne, NJ 07470
Northern Computers Incorporated	5007 South Howell Avenue Milwaukee, WI
Proprietary Controls Systems Corporation	1123 East Walnut Street Carson, CA 90746
SAIC-Security Systems Division	6725 Odyssey Drive Huntsville, AL 35806
Sensormatic Electronics Corporation	500 NW 12th Avenue Mail Stop 33 Deerfield Beach, FL 33442
SMF Systems Corporation	1 Embarcadero Center San Francisco, CA 94111
Software House	1100 Winter Street Waltham, MA 02154
Stellar Security Products Incorporated	3511 Leonard Court Santa Clara, CA 95054
Sygnatron Protection Systems Incorporated	10540 York Road Suite A Hunt Valley, MD
Synergistics Incorporated	9 Tech Circle Natick, MA 01760
Tate Integrated Systems	11431 Cronhill Drive Suite J Owings Mills, MD 21117
Vikonics Incorporated	370 North Street Teterboro, NJ 07608
Vindicator Incorporated	3001 Bee Cave Road Austin, TX 78746
Westinghouse Security Electronics	5452 Betsy Ross Drive Santa Clara, CA 95054

The following paragraphs provide the narrative summaries concerning these firms and their products. Paragraph contents were extracted from vendor literature and survey replies. This information has *not* been independently verified by Sandia National Laboratories.

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2.1.1 Assessment and Control International, Incorporated

Assessment and Control International, Incorporated 2285 Franklin Road Bloomfield Hills, MI 48302	Categorization Size: 11-25 employees Revenue: \$10,000,000-\$25,000,000
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Assessment and Control International, Incorporated's System 9000 is a distributed system with front end systems able to monitor all alarm points and relay closures.

This system supports multiple installations and allows interaction between the systems. Communications between the systems can be made through twisted pairs or fiber optic media. These communications are serial in nature and of a proprietary protocol.

Communications within a system are also made through twisted pairs or fiber optic cables. They are also serial, and follow a proprietary protocol. The maximum transmission speed of these internal communications is 9.6 KB.

A hierarchical database is used to log all system activity. Reports can be generated from this database on paper, a CRT display, or the reports can be written to a file.

This system does not reside on a fully fault tolerant hardware/software platform although the software is engineered for fault tolerance. Multiple processor machines are supported and can operate with the loss of a CPU if the offending CPU is removed. Multiple memory boards are also supported, and the system will operate with a failed board in place. Mirrored hard disks are not supported.

Six intrusion alarm states and six entry control states are supported by this system. Two user modifiable entry control functions are the generation of an alarm when a door remains open after a valid access attempt and the number of unsuccessful access attempts an individual has when attempting to enter through a door.

Card technologies and biometrics of many types will successfully interface to this system. In addition, most intrusion sensors can also be used.

Camera control is available through a third party controller, as is video recording. Frame grabbing and video printing are not offered.

System features which can be modified to suit a particular site include site maps and graphics, and the preprogrammed response to selected system conditions.

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2.1.2 Asset Control Systems Incorporated

Asset Control Systems Incorporated 744 NW 4th St. PO Box 1917 Corvallis, OR 97330	Categorization Size: 1-10 employees Revenue: \$250,000 - \$1,000,000
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The ACS-100 by Asset Control Systems Incorporated is a consolidated model, where all control, communications, display and annunciation functionality, for both the intrusion detection alarm system and for the entry control system, is centralized in a single system.

This system supports multiple concurrent installations of itself, and allows interaction with other computer systems. Communications between systems are made through proprietary serial links made over twisted pairs. Communications within the system are proprietary, serial, and made over twisted pairs. The maximum data transfer rate within or across systems is 9.6 KB.

The ACS-100 maintains a log of all activity which can be reviewed at any time. This data can be reported on paper, on a CRT, or can be written to a file.

This system does not reside on a hardware/software platform which is fully fault tolerant.

Intrusion alarms may have up to six different states, and access control devices may be any of nine states. All of these system events may be displayed indicating the state as well as the change itself. The ACS-100 will interface to most types of intrusion detection sensors.

The access control portion of the system will alarm when a door is sensed as unlocked after a time interval following a valid access control entry. Alarms will also be signaled when an individual has unsuccessfully attempted access from 1 to 10 times in a row. Many types of card readers and biometrics can be used with this system.

Up to 500 Cameras can be controlled through an external camera controller, and a video recorder is also directly supported.

Maps and/or Graphics can be changed by the users to reflect the site where the system is installed. The user can also change the system's response to various events.

The ACS-100 utilizes a Digital Equipment Corporation PDP-11/73 with 4 MB of RAM and a 32 MB hard disk. The operating system used is RT-11.

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2.1.3 Campbell Engineering Company (CECO)

Campbell Engineering Company 2540 Bates Avenue Concord, CA 95420	Categorization Size: 26-50 employees Revenue: \$1,000,001 - \$10,000,000
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Campbell Engineering Company (CECO) produces the Auto-Guard access control software package. It is written in modules, integrating different systems, yet allowing sets of system functions to operate independently. CECO systems may be designed around one or more computers. Depending upon system configuration, one or more software modules may be installed on each computer.

CECO manufactures their own personnel portal, some of which are large enough to allow wheelchair entry. They also market the FastPass-II, a "hand topography verifier" for use with their system.

CECO's access control features include anti-tailgating, anti-passback, personnel protection and theft prevention. Their systems support access control devices from turnstiles to vehicle traps. Other devices which are supported by CECO are card readers, keypads, biometrics, CCTV systems, voice communications, detection and alarm systems, and surveillance systems.

Information concerning system activity is displayed with text and icons on the screen. In addition a hard copy print out is available upon demand. All system activity is stored in a hierarchical database. Queries of this database can be made and the information output as a report or a series of reports. These reports can be on the CRT, on a paper print out, or as a file in the computer.

CECO uses the XENIX operating system for their Auto-Guard system. At the present time the operating system in use is Santa Cruz Organization's XENIX 2.3.4GT for 386/486 computers. The system modeled in the survey used Auto-Guard 2.0 on an 80486 computer with 16 MB of RAM and a 500 MB hard disk. The operating system used on this system was UNIX.

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2.1.4 Control Systems International (CSI)

Control Systems International PO Box 59469 Dallas, TX 75229	Categorization Size: 101-500 employees Revenue: \$25,000,001 - \$50,000,000
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Control Systems International's I/NET 7700 integrates LANs, controllers, and PCs to provide a system that can grow by adding controllers and integrated subsystems. This system is distributed such that it allows either the intrusion detection alarm or entry control portion to be operated separately with full functionality for each subsystem.

I/NET 7700 supports multiple concurrent installations and allows connection and interaction with other computer systems. The physical connections between systems can be made with coax, twisted pairs, fiber optic cables, or with RF links. Connections within the system can be made with coax, twisted pairs, or fiber optic cables. The maximum data transmission speed for these internal communications is 1 MB/Sec. Each event can be signaled using a single message packet. Up to 100,000 of these message packets can be handled each second. The interface to other manufacturer's equipment is made through their Industrial Communications Interface (ICI). The ICI supports RS-422/485 and RS-232 interfaces.

A database of all system activity is kept. The architecture of this database can be hierarchical, relational, or network (also called plex). Reports from this database can be output on paper, to a CRT display, or can be written to a file.

The I/NET system resides on a fully fault tolerant hardware/software platform. It has the capability to operate on a multi-processor hardware platform and can function with a faulty CPU removed or left in place. Multiple memory boards are supported, and the system can again function with a faulty memory board removed or left in place. Mirrored hard disks and multiple network cards are also supported.

The intrusion detection portion will interface to any sensor with an analog or two-state output.

The access control portion allows access based upon date/day, time of day, and location. The system will also support a "door unlocked" alarm when a door does not close and/or lock within some specified time period after a successful entry. Duress codes are also supported. Access control technologies which are supported are coded card readers, proximity card readers, and numeric keypads. Any reader technology can be used if it outputs Wiegand 26 or 32 bit, or ABA track II.

Building management functions such as HVAC and lighting control are supported and utilize Proportional, Integral, and Derivative (PID) algorithms. These PID algorithms are also used for other process control applications.

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Input to the system can be made through a keyboard, mouse, and/or a trackball. Output from the system is made through internal speakers, horns, CRTs, and paper printouts.

Control of a third party camera controller is possible through the "Industrial Communications Interface." The system does not support direct control of a video recorder, frame grabber, or video printer.

The I/NET system detailed in the survey is running on an 80486 with DOS.

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2.1.5 DAQ Electronics Incorporated

DAQ Electronics Incorporated 252 Lackland Drive East Middlesex, NJ 08846	Categorization Size: 101-500 employees Revenue: \$25,000,001 - \$50,000,000
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DAQ's Starwatch is a computerized integrated security system. It is made up of a central monitoring station and remote terminal units which provide the interface to all the alarm sensors, access control units and closed circuit television cameras in the field.

The central monitoring station is comprised of a central file server and a number of operator workstations. The central file server contains the data acquisition program and is responsible for obtaining data from the remote terminal units in the secured area.

The remote terminal units (RTUs) act as concentrators for the data from the access control, intrusion detection and closed circuit television surveillance equipment within the secured areas. These are intelligent units capable of assuming local control in the event of a communications loss with the Starwatch central file server. There are several models of RTUs, each with differing capacity. The largest of these will directly process 2000 alarm inputs.

The access control capacities of the Starwatch system permit over 128,000 access control cards, 1000 doors and 253 access levels. Card readers of any technology may be used including reader/keypad combinations. Guard tours and anti-passback are two of many functions which are available in the Starwatch system.

Alarm monitoring capabilities allow over 150,000 sensor inputs. When an alarm occurs, pertinent floor plans may be displayed, indicating the location of the alarm. These floor plans, or maps, can be scanned in or downloaded from CAD packages such as AutoCAD. In addition to identifying the location and type of alarm, video images of the alarm site can be brought up on a monitor to help the operator identify the cause of the alarm. These video images are selected automatically without operator action in response to alarms. A maximum of 1024 cameras can be utilized and these images can be displayed on any of 256 monitors.

The Starwatch system modeled in the survey is operating on a Unisys Supergen 5000. This machine utilizes an 80486/33 processor, 36 MB of RAM, and has a total of 2,800 MB of hard disk space. The operating system used is CTOS.

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2.1.6 DSX Electronics Incorporated

DSX Access Systems Incorporated 12021 Plano Road Suite 190 Dallas, TX 75243	Categorization Size: 11-25 employees Revenue: \$1,000,001 - \$10,000,000
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The DSX-1030 combines access control, alarm monitoring, and building control functions into one system. The DSX software is designed for very large systems, but will function on systems on all sizes. When changing from a small site to a larger facility the software remains the same. Only the required new hardware needs to be installed.

The DSX-1030 supports 4096 card readers/keypads and 50,000 users. A maximum of 1000 different access levels are available to describe groups of doors which card holders can enter. Door access levels can change with the time of day, day of week, and holidays.

Alarm monitoring functions permit annunciation of alarms from over 30,000 separate points. These alarm points can be programmed to arm and disarm themselves on individual schedules that can vary with the time of day, day of week, and holidays. When an alarm occurs the operator is prompted with an audible alert. At this time an alarm point description and action message are displayed. A key stroke takes the operator to the graphics screen displaying the alarm, and another key stroke zooms the graphic in or out. Up to 10,000 graphic screens are supported. When the alarm is resolved the operator types in the action taken and any comments which could clarify the event. All of these entries become part of the permanent history log.

Other DSX-1030 functions include elevator and HVAC control.

The DSX-1030 system is a distributed system. The system is made up of electronic input devices programmed to control electrical output devices. In its simplest form it is made up of sensor inputs monitoring various alarm points and card readers controlling door locks or other electrical devices. The system's electronic intelligence is programmed to use system inputs to control relay outputs. This system uses intelligent field units (DSX-1030 hardware) to perform most of the system's local actions. To do this, virtually all system data existing on the host CPU also resides in each field unit. Local activity is also buffered in these units for subsequent uploading to the host PC.

The host PC used in the survey model is a Dell 486/66 with 8 MB of RAM and a 200 MB hard disk. The operating system used is DOS.

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2.1.7 EDICON

EDICON Systems Division Eastman Kodak 300 Canal View Boulevard Rochester, NY 14623	Categorization Size: 101-500 employees Revenue: \$25,000,001 - \$50,000,000
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EDICON's Envoy family of products range from a stand-alone identification management system to a networked integrated access control system. The systems in this family are the Envoy 4000 Identification Management System, Envoy 5000 Networked ID Management System, Envoy 6000 Integrated Access Control System, and the Envoy 7000 Integrated Access Control System. EDICON completed the survey based on the capabilities of the Envoy 7000 System.

EDICON's Envoy 7000 "Integrated Access Control System" combines the functions of identification management and access control on a single database on multiple workstations. All workstations are networked together, and changes made to the database are immediately available to all components of the system. Live video is available for comparison with stored images when attempting to verify the identity of the access requester. A multitasking operating system allows the "simultaneous" operation of tasks. Some of these tasks are identification management, access control, alarm graphics, report generation, CCTV control, and system administration.

The Envoy 7000 system uses Access and Alarm Processors as an interface between the field units and the alarm annunciator. These intelligent panels are able to input digital and analog information from the field equipment. Alarms are displayed through a graphical user interface. Information is displayed to the operator on site maps which provides information indicating the location, date, time, priority, and type of alarm.

Other system capabilities are CCTV control and badge production. Several card technologies are supported, among them are magnetic stripe, bar code, proximity, and wiegand.

All workstations in this system are 80486/33 machines with VGA displays. The operating system used is OS/2 2.0.

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2.1.8 ENSEC Incorporated

ENSEC Incorporated 2600 North Military Trail Suite 290 Boca Raton, FL 33431	Categorization Size: 101-500 employees Revenue: \$25,000,001 - \$50,000,000
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Ensec's flagship security system is the Ensec System ES2000*Plus*. The ES2000*Plus* is designed as an integrated access control and alarm monitoring system. Some of the system functions are listed below.

Networked Systems

>1000 Readers

Dynamic Alarm Graphics

Multiple Workstations

Elevator Control

Guard Tours

Fault Tolerant Capable

Subsystems Integration Modules (CCTV, HVAC...)

The basic building block of the system is the Ensec DC500. The DC500 is a "multi-purpose data collector which is capable of operating as a stand alone unit or in a networked configuration." Each DC500 supports 2 card readers (one integrated and one external) of various technologies. The ES2000 also has a 32 character backlit LCD display for user defined messages and a 16 button keypad for data entry. Up to 20,000 time stamped transactions can be stored in the DC500. In the event of a power failure an optional UPS will provide power for 20 hours. Over 1000 readers/terminals and over 100,000 badges can be supported by the system.

The ES2000 uses a Graphical User Interface to the operator. A maximum of 7680 alarms and other activities can be indicated with dynamic icons on maps of the site. Reports of system activities are available through the built-in relational database functions.

Some optional system features are time and attendance monitoring, elevator control, CCTV control, visitor logs and video imaging.

Ensec System EX2000 operates on IBM compatible 80386 PCs running QNX (POSIX platform).

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2.1.9 Epic Security Systems (Epic Data)

Epic Security Sytems (Epic Data) 7280 River Road Richmond, British Columbia, Canada V6X 1X5	Categorization Size: 101-500 employees Revenue: \$25,000,001 - \$50,000,000
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Epic Data's Security Management System (SMS) integrates CCTV, sensors of various types, and access control devices into one security system. The most minimal configuration combines access control, alarm management, intruder and hazard detection, and central administration systems. More elaborate versions include capabilities such as video surveillance, guard-tour control, asset management, and data collection.

The SMS's four main subsystems are the host computer workstation, communication system, sub-host workstations, and the door control system. The host computer is a general purpose, parallel, UNIX based open system computer which supports simultaneous execution of the parallel programs inherent in the SMS application. The SMS computer supports a database that conforms to the SQL standard and a group of standard networking/communication protocols.

The host computers communicate to the remote devices through shielded, twisted pair wire. It is also possible to transmit information over fiber optic cable, modem links, etc.

The sub-host workstation network provides continuous bi-directional communications to update sub-hosts with new host data and to transfer alarms and transaction data to the host. Each sub-host workstation consists of two consoles and two printers directly connected to the host computer. Each sub-host can be individually configured; in effect, the sub-host operator has an independent computer system for administration and alarm functionality.

The Secure Access Terminal (SAT) is the intelligent portion of the door control subsystem. The SATs include a card reader, key pad, and display for user prompts. SATs are capable of supporting the intelligence necessary for independent access control decisions, scheduling, door mechanism control, and management of alarm conditions.

Access control functions are handled locally by the SATs. Some of the access control features which can be implemented are anti-passback, hierarchical, non-hierarchical, and mixed access structures. Over 1500 access terminals are supported, and there is no practical limit to the number of access codes which are available.

Alarm activities of all types are announced to the operator on a screen and printer. Cameras and switchers can be pre-programmed to display the view of the alarm area to help the operator with assessment. Many types of sensors can be monitored by this system. In addition to intrusion alarms, sensing devices may be connected which will

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

detect fire, smoke, and gas. Up to 27,000 alarm points in any number of zones can be monitored, and all alarms are annunciated at the control console.

The SMS software operates on UNIX and VOS operating systems. The system can run on fault tolerant or redundant central processors, with redundant communication paths.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.10 Hirsch Electronics Corporation

Hirsch Electronics Corporation 1751 Langley Avenue Irvine, CA 92714	Categorization Size: 26-50 employees Revenue: \$1,000,001 - \$10,000,000
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Hirsch's Digitrack system is scramble pad based and their access control and alarm monitoring functions are designed to be operated by keypad. Autonomous field panels offer local access and alarm control through encrypted networking to PC based hosts for central reporting, recording, control and programming of system events and functions.

Area access and masking of alarm points are selectable by area/zone, user, time of day, day of week, and by holidays. Hirsch's goals were to develop a system which would be simple to use, secure and resistant to compromise, but still sophisticated enough to handle the ever increasing control problems. Some of these are listed below.

Elevator Control

Alarm System Control

HVAC Control

Two Person Access

Two Person Tracking

Interior Secure Area Restrictions

Time Logging

Watch Tour Monitoring

Alarm and Relay Linking

As mentioned above, these functions can be controlled through their keypads. The Hirsch keypads or ScramblePads have the unique ability to scramble the digits (shuffle the location of the digits) which prevents code compromise by pattern recognition. An internal viewing restrictor prevents anyone from reading the display other than the person standing directly in front of the keypad. The keypad is also sensorized to detect physical tampering and will detect and report invalid code entries.

The Scramble*Net System Management Network maintains the security of standalone systems, yet provides the convenience of centralized management of locally wired networks, or of national or international networks over dial-up or leased phone lines.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Hirsch's encrypted Scramble*Net network places central logging and reporting control under command of the security manager. Optional software programs for graphic alarm tracking and reporting provide additional security management capability.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.11 Logiplex Corporation

Logiplex Corporation 5221 Southwest Corbett PO Box 3428 Portland, OR 97208	Categorization Size: 11-25 employees Revenue: \$1,000,001 - \$10,000,000
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The Logiplex Facilities Management System combines many functions into one system. Some system functions are listed below.

Intrusion Warning

Early Warning Fire

Access Control

HVAC Failure

Fuel Management

Temperature Warning

Equipment Failure

Local Sounder

Locking Doors

Pre Heating Equipment

Local Printed Events

Local LED Graphic Display

The host computer has the ability to interface with many different remote devices, among them are terminals, modems and intelligent field panels. One of these, the Auditor, supports five modules. There are four types of modules. They are relay outputs, serial ports, modems, and intrusion inputs. The intrusion modules have the ability to input an analog signal and compare it to a user selectable threshold to determine its status. The other intelligent field panel is the Inquirer. The Inquirer is designed to accommodate smaller facilities while still offering most of the features of the larger Auditor field panel. The Inquirer has the ability to integrate intrusion, fire, card access control, and intelligence and process monitoring into a single distributed intelligence multiplexing system.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Alarm inputs may come from many different types of sensors. Some of these may be intrusion detection sensors, process or industrial sensors, or building management sensors. Up to 2500 alarm points may be identified within a single facility. All of these are individually reported at the Logiplex Central Station. Alarm activities are displayed on screen in color coded symbols depicting the type of alarm event. The symbols represent intrusion, fire, card access, space protection, and proximity devices. The alarm processing program displays English text first by sensor, and then upon function key command, by graphic representation. This graphic may be a floor plan of the facility being monitored.

The access control system supports many kinds of access technologies including Wiegand, Magstripe, Marlock, Rusco, Cardkey, TDSI, Hirsch and Indala proximity readers. PINs are also selectable as well as bi-directional voice communication. A maximum of 12,000 card access users and 224 card readers are supported.

The Logiplex host computer software must be one of two types. If the operating system used is Xenix, the machine must be at least an 80286 or 80386 with 4 MB of RAM and a 60 MB of hard disk space. When Unix is used, the host machine must be at least an 80486 with 8 MB of RAM and a 130 MB hard disk.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.12 Martek International

MARTEK International (Scientific Approaches) 50 West Broadway Suite 1100 Salt Lake City, UT 84110-2936	Categorization Size: 1-10 employees Revenue: \$1,000,001 - \$10,000,000
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Graphic Link is Martek's security system. They have recognized that the quickest way to transfer information to a human is to display it in graphic form. In accordance with this, their system supports a wide range of graphic screens with the goal of making the user/machine interface as efficient as possible. Operator inputs to the system can also be made with a mouse or a touch screen.

Graphic Link is primarily an alarm annunciation type of security system but it can handle many aspects of access control. As they state it, "Most access control functions are distinctly different and do not directly relate to the functions of other subsystems in a master system. The functions in common are mostly access system alarms and access system history logging. Our system integrates these two access control functions into the master system, while leaving unrelated functions separate to improve performance, reliability, and operational flexibility."

Graphic Link will monitor up to 32,767 alarm points. Alarm responses by the system are unique for each of the 255 different alarm states possible for each sensor. The sensors in the field can utilize dry contacts to signal their status or may have analog outputs. High and low thresholds may be set which will determine the status of analog field devices. Incoming alarms are displayed with an icon which has changed color and blinks in the appropriate location in the site map. These maps may be drawn in AutoCAD, or may be scanned images which have been imported into Graphic Link. An alternate/additional response is to have the system audibly call out the event in English over a speaker. In response to alarms Graphic Link can switch cameras to automatically display the area of interest to the operator, and it can also start video recording of the scene on a VCR.

Up to 32,767 camera inputs can be indexed into the system. Camera control functions are pan, tilt, motor speed, lens focus and zoom.

Access control functions are primarily in the area of access system alarms and access system history logging. They do not directly support access control devices but will track and log activity through access control points. It is possible for the operator to manually control access by utilizing the Graphic Link's remote control functions. Up to 32,767 devices can be controlled in this way, and it is possible to do so automatically in response to an alarm from a field unit.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

The Graphic Link system described in the survey utilized an IBM compatible 80486 machine with 4 MB of RAM and a 100 MB hard disk. Graphic Link runs through MS-DOS.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.13 Monitor Dynamics Incorporated

Monitor Dynamics Incorporated 9518 9th Street Rancho Cucamonga, CA 91730	Categorization Size: 51-100 employees Revenue: \$1,000,001-\$10,000,000
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Monitor Dynamics Safenet system is a multitasking, multiuser, distributed processing system using a file server containing a common database. Entry control and alarm monitoring functions are run simultaneously and are completely interactive.

This system supports multiple concurrent installations and will also interact with other computer systems. Communications with other systems can be made with several types of media, coax, twisted pair, fiber optic cables, RF, infrared, and spread spectrum links. The maximum rate of data transfer between these systems is 256 KB.

Communications between elements within the system can also be made several ways. Coax, twisted pairs, and fiber optic cables can be used. The maximum rate of data transfer within the system is also 56 KB.

A relational database is used to log all system activity. When reports of system activity are needed they are available on paper, CRT, or as files on magnetic media. The format of these reports can be defined by the user.

This system is designed into a fully fault tolerant hardware and software platform. It will continue to operate with a "bad" CPU in place and the system itself supports mirrored hard disks.

Up to 32,000 alarm points can be monitored, and these can be any of the most common sensor types. Alarm activity shows up on the screen with a change color in the appropriate area of the site map. This change from normal indicates the alarm type and the acknowledgment status. The maps/graphics on screen can be drawings done in a CAD package or may be scanned pictures of the area of interest.

The access control portion allows 32,000 card holders and will support 1024 card readers of various technologies. The system will allow unlimited unsuccessful entry attempts, but access through a key pad is limited to three attempts. The access control device may be any of several technologies, proximity readers, numeric key pads, coded card readers, and/or biometric devices such as hand geometry units, retinal ID units, fingerprint ID units, voice ID units, or signature ID units.

The system does support camera control, but it is done through an external controller.

The system modeled in the survey runs on an IBM compatible 80486/50 machine with 8 MB of RAM and dual 100 MB hard disk drives. The operating system used is Concurrent DOS.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.14 Mosler Incorporated

Mosler Incorporated 415 Hamburg Turnpike Wayne, NJ 07470	Categorization Size: Over 1000 employees Revenue: Over \$50,000,000
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Mosler's Linx security system utilizes a distributed processing configuration. Intelligent field panels are used to gather data from the actual field devices. This system supports multiple concurrent installations, and will also support connection and interaction with other computer systems. Communications with other like systems is serial, made with twisted pairs, and uses a proprietary protocol. The maximum data transfer rate of these external communications is 56 KB.

Internal communications can be made over coax, twisted pairs, and fiber optic cables. These communications use a proprietary protocol. The maximum data transfer rate of these internal communication is also 56 KB.

A relational database of system activity is maintained which can be used when needing an audit trail, logs, or records. These reports are available on paper, on a CRT, or in a file on disk.

This system does not reside on a fully fault tolerant system, but does have several features to increase its reliability. Multiple processors can be used, and the system will function with a "bad" CPU in place. Mirrored hard disks can be used, multiple networked cards are supported, and a built-in UPS is provided to enhance power supply reliability.

Up to 500,000 intrusion or other alarms can be monitored by this system. These alarms can come from magnetic switches, microwave, passive infrared, glass break and inductance sensors.

Access control functions will allow 32,000 card holders. When attempting access through a door, the alarm is masked by software so the system does not record an intrusion alarm. Access is limited by day/date, by time, and by location. The system will alarm when it does not see a closed door after an individual passes through an access point. The access control devices can be of many types, smart card readers, proximity readers, keypads, and biometrics such as hand geometry units, retinal ID units, and fingerprint ID units.

The visual interface to the operator is made with maps, graphics and text. There is also an internal speaker which is used to alert the operator.

A maximum of 32 cameras can be controlled by the system. No video recorder, frame grabber, or video printer is supported by the system.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

This system is designed to operate on an 80486 machine with 16 MB of RAM and a 120 MB hard disk. The operating system used is Unix.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.15 Northern Computers Incorporated

Northern Computers Incorporated 5007 South Howell Avenue Milwaukee, WI 07470	Categorization Size: 26-50 employees Revenue: \$10,000,001-25,000,000
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Northern Computer's PC-PAC integrates access control and alarm monitoring through software. It is a distributed system which allows either the intrusion detection alarm or entry control system to be operated separately with full functionality for each subsystem.

Multiple concurrent installations of the system are supported, and the system will also connect and interact with other computer systems. These communications can be made through coax, twisted pairs, fiber optic cables, and over RF links. The maximum rate of data transmission is 9.6 KB/sec.

Internal communications within the system can be made through coax, twisted pairs, and fiber optic cables. Serial and Ethernet protocols are supported at the lower level (OSI model data link layer equivalent) and NetBIOS protocols are supported at the higher level (OSI model data link layer equivalent). The maximum rate of data transmission for these internal communications is 10 MB/sec.

A relational database logs all system activity. Up to 50,000 records can be stored, each with a maximum of 29 fields. Reports from this data can be output on paper, a CRT display, or to a file.

State changes in the system can be assigned priorities by the user. A maximum of 4096 intrusion alarm states can be assigned and 5 may be uniquely identified on the display or in the database. This system will interface to most intrusion detection sensors.

A maximum of 6 entry control system states are supported and may be identified on the display or in the database. Access to any given area is determined by date/day, time, location, or by the number of uses or days. This entry control subsystem will support a "door unlocked alarm" under circumstances when the door does not close and/or lock within some specified time after a successful access attempt. Most card, keypad, and biometric technologies are supported for use in entry control devices.

Up to 100 cameras can be controlled for pan, tilt, and zoom. In addition, the record, play, fast forward, and rewind functions of a video recorder can be controlled.

The system described in the survey was a Dell 486/50 with 8 MB or RAM and a 300 MB hard disk. The operating systems which can be used are OS2, DOS 6.0, and RMX.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.16 Proprietary Controls Systems Corporation

Proprietary Controls Systems Corporation 1123 East Walnut Street Carson, CA 90746	Categorization Size: 26-50 employees Revenue: \$1,000,001-10,000,000
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Proprietary Controls System Corporation's Linc Net is a consolidated system where all functionality is centralized in a single system. The operator's primary display consists of maps, drawings, and text.

This system supports multiple concurrent installation and will also interface to other computer systems. Twisted pairs are used for this with the Ethernet protocol. NetBIOS protocol is also supported for communications with external systems. The highest rate of data transfer between these systems is 10 MB.

Communications within the system is done with a proprietary protocol.

All system activity is automatically logged in a relational database which permits queries upon demand. These reports are output on paper or on the CRT display, and are of a user selected format.

This system does possess some level of planned high reliability for hardware and software although it does not reside on a fully fault tolerant hardware/software platform. As an example, the system supports mirrored rigid disks.

User assignment of priorities to system events is allowed. The maximum number of intrusion alarm states is four. Most popular sensor technologies are supported, including infrasound sensors.

The maximum number of entry control system states supported is 12. All of these states can be discerned on the display and in the database log.

Between 1 and 65,535 unsuccessful access attempts may be made at any one point. The number of unsuccessful attempts which will result in an alarm is selectable by the system administrator. Most known card and biometric technologies are supported by the system.

Up to 512 cameras can be controlled for pan, tilt, and zoom. These video images can be recorded on a video recorder to help with assessment of alarms or as part of an audit trail.

The system described in the survey operates on an 80386/40 machine with 8 MB of RAM and with a 100 MB hard disk drive. The operating system used is Deskview.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.17 SAIC Security Systems Division

SAIC Security Systems Division 6725 Odessey Drive Huntsville, AL 35806	Categorization Size: Over 1000 employees Revenue: Over \$50,000,000
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Science Applications International Corporation system is the SAIC Security Management System or SAISMS. SAIC is a system integrator for security systems. They have taken the approach that a complete security system is beyond the capability of any one manufacturer. They have designed a system which integrates security technologies of different types from different manufacturers. SAISMS supports intrusion detection, alarm monitoring, access control and CCTV. It interfaces with virtually all existing security hardware making it easier to retrofit the SAISMS to an existing system.

The access control portion functions with card readers and keypads of various technologies, and also supports several types of biometric devices. Anti-passback and anti-tailgating features are available and card readers can be used for guard tours and elevator control. Up to 250,000 persons can be enrolled in the database. 15,000 card readers are supported.

Thousands of alarm points can be monitored, and sensor lines can be encrypted in accordance with FED-SPC 1027. Alarms can be masked from the keyboard or from a card reader, or they may be programmed to mask alarms during selected time periods. Alarms are indicated on the operator's screen with maps and color graphics. These alarms are displayed in an order determined by the time and priority of the alarm. In addition to merely annunciating the alarm, additional related information may be displayed, such as emergency telephone numbers and actions to take during that alarm. A maximum of 75,000 alarm points or zones can be monitored.

Camera pan, tilt, and zoom control is available to the operator. In response to alarms the appropriate camera(s) will automatically turn and zoom in on designated areas. This image is displayed to the operator who can use this information to help assess the cause of the alarm. Video recording of the event is possible to archive the event and to help the operator assess the cause of the alarm.

SAISMS is a multi-user system, supporting simultaneous access by as many terminals and users as necessary. Off-the-shelf Digital MicroVAX computers serve as the heart of this system. These machines are readily networked through fiber, permitting satellite systems to be installed under the control of the master computer.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.18 Sensormatic Electronics Corporation

Sensormatic Electronics Corporation 500 NW 12th Avenue Deerfield Beach, FL 33442	Categorization Size: Over 1000 employees Revenue: Over \$50,000,000
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The Sensormatic Electronics Corporation's security system is the AC500. This system accomplishes card access and alarm control through a system with a distributed processing architecture.

The AC500 does not support multiple concurrent installations itself, but it does support interaction with other computer systems. This communication can be made with twisted pairs or through fiber optic cables. The maximum rate of data transfer between systems is 10 MB/sec.

Twisted pairs and fiber optic cables are also used for the system's internal communications. These communications are serial, and the maximum data transfer rate here is 9.6 MB/sec.

The AC500 maintains a log of all system activity in a relational database. Queries of the database can be made resulting in reports on paper or on a CRT. The report format is selectable by the user.

The user is able to assign priorities to state changes in the system. Up to five different alarm states are supported and reported in such a way that all of them can be identified on the display. Most current sensor technologies are compatible with the AC500.

The maximum number of entry control states which are supported by this system is greater than 10. All of these can also be identified on the display. Requests for access are checked by location, for the correct day, and for the correct time of day. The access control technologies which are supported are swiped cards and keypads. Duress alarms can be signaled with the entry of the appropriate code into a keypad.

The operator is presented with information of system activity on his/her display with maps and drawings, icons, and text. The actual device in question will be identified in some manner. Other information available to the operator is through video images of the site. A maximum of 512 cameras are supported. At the present time, there is no video recorder, frame grabber, or video printer capability.

The AC500 will run on a Compaq 80486 with 8 MB of RAM and a 340 MB hard disk. The operating system used on this machine is SCO Xenix.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.19 SMF Systems Corporation

SMF Systems Corporation 1 Embarcadero Center San Francisco, CA 94111	Categorization Size: 11-25 employees Revenue: \$1,000,001-\$10,000,000
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SMF Systems Corporation's ACS 51 utilizes a single database operating under a multitasking operating system to achieve integration between alarm monitoring and access control functions. The system is a consolidated system where functionality is centralized in a single system.

Multiple concurrent installations of the system are supported as well as connection and interaction with other computer systems. Communications between systems is made through coax, twisted pairs, or fiber optic cables. Several protocols, one of them proprietary, are available for use. The maximum transmission speed for these external communications is 19.2 KB.

Internal communications within the system use the same media as the external communications. However, the sole higher level protocol used here is proprietary. The maximum transmission speed within the system is 56 KB.

The system maintains a hierarchical database of all system activity which can be queried for audit trails, records, and other reports. These reports can be output on paper, a CRT, or magnetic media.

A fully fault tolerant hardware/software platform is used in this system and the security applications software was engineered for fault tolerant operation. Multiple CPUs are supported and the system can operate with a failed CPU in place. The same is true of memory boards. Mirrored hard disks are also supported. An external UPS is provided to enhance power supply reliability.

Four intrusion alarm states and entry control states are supported by this system. All of them can be identified when device changes occur in the field. These field devices can be sensors of various technologies or access control devices. The access control functions allow two-person rules, and limit access by location, date, and time of day. The resolution for the time of day criteria is one second. Up to 10 unsuccessful entry attempts can be made with no system alarm occurring. These attempts can be made on card readers of many types. Biometric identifiers are also supported for access control.

Up to 512 cameras can be controlled for pan, tilt, and zoom functions, and the system also supports the recording of these images on a VCR. Record, play, fast forward and rewind functions of the VCR can be controlled by the system. Frame grabbers and video printers are also supported.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

The system described in the survey operates on an IBM 7546. This machine uses an 80486 processor with 8 MB of RAM and a 520 MB hard disk. The operating system used is SCO's Unix V.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.20 Software House

Software House 1100 Winter Street Waltham, MA 02154	Categorization Size: 26-50 employees Revenue: \$10,000,001-\$25,000,000
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Software House's C-CURE family of security products form a modular, integrated system incorporating many features. Some of the functions which are available in their C-CURESystem 1 Plus are listed below.

Alarm monitoring

Access Control

Networks

Graphics

Historic Data

Digital Communications

Biometric Identification

Photo ID

Watchtour

Visitor Log

CCTV Control

Personnel Identification and Badge Creation

Because the C-CURESystem 1 Plus is modular, it is easy to upgrade and add new capabilities/functions. System functions can be placed into one of three categories: alarm monitoring, access control, and building management. This system is able to interface with a wide range of the industries most popular security devices from over 40 vendors. This allows the system to interface to existing equipment and allows a great deal of latitude in the selection of new equipment.

System events can be displayed in three different ways. Two of the screens display events in text, and the third displays events in the appropriate location on user drawn maps. Up to 300 of these maps can be supported by the system. A minimum of 1024 alarm points can be monitored, and each can be one of 1000 different alarm conditions.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

The access control portion supports a maximum of 256 card readers and up to 32,000 cards in the database. Access can be restricted with respect to door groups, security levels, time of day, date, and other parameters.

The C-CURESystem 1 Plus operates on any Digital Equipment Corporation VAX computer with the VMS operating system. The system represented in this survey was operating on a VAX 4000 with 64 MB of RAM and a 381 MB hard disk.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.21 Stellar Security Products Incorporated

Stellar Security Products Incorporated 3511 Leonard Court Santa Clara, CA 95054	Categorization Size: 11-25 employees Revenue: \$1,000,001-\$10,000,000
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Stellar's MCM-1000 Multiplex Monitoring System is a consolidated type where all of the control, communications, display and annunciation functionality for both the intrusion detection alarm subsystem and for the entry control subsystem is centralized in a single system. It is, however, primarily an alarm monitoring system.

This system supports multiple concurrent installations of itself and will connect and interact with other computer systems. Communications with other systems are made with twisted pairs, fiber optic cables, or with RF links. The protocol used is proprietary. The maximum rate of data transfer between systems is 4.8 KB.

Communications within the system are made with twisted pairs and fiber optic cables. The protocol is proprietary, and the maximum rate of data transfer is 4.8 KB.

The MCM-1000 possesses logging capability to record system activities. This log is maintained as a relational database which can be queried to provide reports of the information of interest on a CRT or on paper. The format of these reports is preprogrammed.

There is a level of planned high reliability for hardware and software in this system. The system can operate with multiple memory boards and will function with a failed memory board in place. An external UPS is supplied to enhance power supply reliability.

A maximum of 15,000 alarm points can be monitored, and there are the same number of two state outputs available to control field devices.

The operator is advised of system activity through the CRT display and the internal speaker. The visual data can be presented in maps/drawings, icons, and text. Alarm activity can be shown on maps of the alarm area. The MCM-1000 will support up to 50 of these maps.

No card readers or biometric devices are directly supported, but the system will interface to any device which has a two state or analog output. Cameras can be controlled through an external controller. There is no support for a video recorder, frame grabber or video printer.

The MCM-1000 system operates on a PS2/70 with 4 MB of RAM and an 80 MB hard disk drive. The operating system used is DOS 5.0 or higher.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.22 Sygnetron Protection Systems Incorporated

Sygnetron Protection Systems Incorporated 10540 York Road Suite A Hunt Valley, MD 21030	Categorization Size: 11-25 employees Revenue: \$250,000-\$1,000,000
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Sygnetron's Sygneplex security system is designed primarily as an intrusion detection system but does have access control capabilities integrated into it. This system has a consolidated structure, where all functionality is centralized in a single system.

This system supports multiple concurrent installations. Communications between these systems are made over coax or twisted pairs. Lower level protocols are serial or Ethernet and higher level protocols are proprietary. The maximum transmission speed supported for external communications is 19.2 KB.

Internal communications between system components is made over coax, twisted pairs, or fiber optic cables. Lower level protocols are serial or Ethernet and higher level protocols are proprietary. The maximum transmission speed supported for internal communications is 19.2 KB.

Records of all system activities are kept to provide an audit trail. Preprogrammed reports of past system activity can be output on paper, a CRT, or a file.

This system resides on a hardware/software platform which is fully fault tolerant. Multiple processors are supported, and the system will operate with a faulty processor in place or removed. Mirrored hard disks are supported, as are multiple network cards. To insure a reliable power source, multiple internal power supplies are provided.

Access attempts are checked by date/day, time, location, and access level. The maximum number of unsuccessful attempts by an individual to gain access is fixed at three. Most card technologies are supported, and some biometric technologies are supported as well.

All major intrusion detection sensors are supported.

Up to 99 cameras can be controlled for pan, tilt, and zoom. These video images can be recorded, rewound, and played back on a VCR under system control. No frame grabber or video printer is supported.

This system operates on a VAX 4000 model 200 with 32 MB of RAM and a 720 MB hard disk. The operating system used is VMS.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.23 Synergistics Incorporated

Synergistics Incorporated 9 Tech Circle Natick, MA 01760	Categorization Size: 26-50 employees Revenue: \$1,000,001-\$10,000,000
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The WA-PAC system by Synergistics Incorporated does not support multiple concurrent installations of itself but it can communicate and interact with other computer systems. These communications are serial in nature, made over twisted pairs, and use a proprietary protocol. The maximum transmission speed supported is 19.2 KB.

Internal communications are made over twisted pairs with a proprietary protocol.

The WA-PAC system possesses a storage function which keeps a record of all system activity. This database is relational in architecture. A query of this database will result in a report on paper, a CRT, or a file.

This system does not possess any level of planned high reliability for hardware or software.

The end user has the ability to assign priorities to different system events. Two levels of intrusion alarm states and three levels of entry control system states are supported. Most of the popular entry control card technologies are supported. This system also interfaces to most intrusion detection sensors.

There is no provision for CCTV control.

The WA-PAC runs on an IBM compatible 80386 machine with 2 MB of RAM and a 40 MB hard disk drive. The operating system used is DOS.

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

2.1.24 Tate Integrated Systems

Tate Integrated Systems 11431 Cronhill Drive Suite J Owings Mills, MD 21117	Categorization Size: 26-50 employees Revenue: \$1,000,001-\$10,000,000
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The TIS 4000 security system was designed for industrial supervisory control and entry control, and security functions are an added application layer. This system is distributed, where overall control, communications, display and annunciation functionality for both the intrusion detection alarm subsystem and for the entry control subsystem is centralized in a front-end system. This allows the intrusion detection alarm or entry control system to be operated separately with full functionality for the subsystem.

Multiple concurrent installations are supported as are connections and interactions with other computer systems. These communications can be made over several types of media such as coax, twisted pairs, fiber optic cables, and RF links. The maximum rate of data transmission between systems is 10 MB.

Communications within the system can be made over coax, twisted pairs, and fiber optic cables. The maximum transmission speed between these devices is 10 MB.

Logs are maintained recording all system activities. This information is kept in a relational database which supports ad hoc queries. When desired, reports can be output on paper, to the CRT, or to a file.

This system resides on a hardware/software platform which is fully fault tolerant. A distributed architecture is used with functional duplication and redundancy for key modules. Multiple processors are supported, and the system will function with a faulty processor left in place or removed. If a memory board fails, the system will still function if it is left in place or removed. Mirrored hard disks are supported as are multiple network cards and multiple internal power supplies. A built in UPS is also provided.

Up to 16 intrusion alarm and entry control system states are supported. All of these states can be displayed on the operator display. Access control requests are checked against the database to see if the requester should be granted access on that day, date, time, and at that location. Most card technologies are supported for access control. The same is true of the intrusion detection portion. It will interface with most sensor technologies.

The system modeled in the survey runs on a SUN Sparc or a DEC Alpha series machine. This utilizes M68020 processors. 24 to 32 MB of main memory and 800 to 1500 MB of hard disk storage per workstation are used. The operating system used is Posix/Unix.

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Integrated Alarm Annunciation and Entry Control Systems

2.1.25 Vikonics Incorporated

Vikonics Incorporated 370 North Street Teterboro, NJ 07608	Categorization Size: 26-50 employees Revenue: \$1,000,001-\$10,000,000
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Vikonics markets several systems, the VISIDS 2500, 3000, and 3500. A fourth system, the VISIDS 4000 has a redundant configuration consisting of two complete VISIDS CPUs operating in parallel. The VISIDS 3500 system was represented in the survey. It integrates access/entry control, intrusion detection, and visual assessment (CCTV).

The VISIDS 3500 supports multiple concurrent installations but does not support connection and interaction with other computer systems. When multiple installations are used, communications between systems are made over twisted pairs and/or fiber optic cables. The maximum data transfer rate is 10 MB/sec.

Communications within the system are also made over twisted pairs and/or fiber optic cables. At the lower level (OSI model data link layer equivalent) a serial protocol is supported. At the higher level (OSI model data link layer equivalent) a proprietary protocol is supported. Data transfer at this level can be made at 9.6 KB/Sec. A system event can be signaled over internal communications with a single message packet. A theoretical maximum of 1000 message packets can be handled by the system each second.

The system maintains a hierarchical database of system activity with a capacity of 200,000 records. Each record may have a maximum of 12 fields. Information from the database can be output to a CRT display, on paper, or to a file.

The VISIDS 3500 supports assignment of system event priorities by the user. Up to 8192 intrusion detection sensor zones can be monitored. A maximum of 13 intrusion alarm states are supported, all of which may be identified when displayed on screen or when written to the system log. Most intrusion detection sensors and any device with dry contact outputs can be used.

A maximum of 32,000 cardholders and 1024 card readers are supported by the access control portion of the VISIDS 3500 system. Twenty different access control system states are supported, and can be uniquely identified on the display and in the log/database. Physical access to any area can be restricted by date/day, time, or location. Other access control features are a duress code which can be programmed into the system and an alarm when a door remains open or unlocked after a successful access. Virtually all technologies (card, keypad, biometric) available for access control use can be used with the VISIDS 3500.

Up to 999 cameras can be controlled by the system for pan, tilt, and zoom. Other video devices which can be controlled are a video recorder, frame grabber, and a video printer.

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The VISIDS 3500 system runs on an 80486/33 computer with 8 MB of RAM and 120 MB of hard disk space. The operating system used is Interactive Unix 3.2.

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2.1.26 Vindicator Incorporated

Vindicator Incorporated 3001 Bee Cave Road Austin, TX 78746	Categorization Size: 26-50 employees Revenue: \$1,000,001-\$10,000,000
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Vindicator markets a full line of security products. In this survey they chose to model their ECS series system. The heart of this is the ECS-5000 series entry control system. This security resources management tool combines database features, real time alarm annunciation, and distributed processing. The ECS-5000 is available with its own alarm monitoring software or it may be combined with the Microplex series of monitor and control units.

The ECS-5000 interfaces to the ECS-1400 series transaction processors and UHS-6000 series transponders. These peripheral devices perform the majority of the work of the entry control system, leaving the ECS-5000 to perform the tasks required to interface to the operator.

Access control functions permit a maximum of 100,000 credential holders and will control up to 1024 card readers. Access can be granted if conditions for time schedules, authorization levels, and other parameters are met. Other access control features are anti-passback rules, and rules which determine which individuals or groups are permitted to enter a particular location.

Alarm monitoring functions allow a maximum of 2048 individual alarms. The system will interface to sensors of many types.

The ECS-5000 will allow up to 5 alarm and 21 access control states. This intrusion alarm and/or access control activity is displayed on a screen in graphic form. Icons are used on site maps to identify the type and location of the event to the operator. All of these activities are logged into the system event log. In addition, administrative use of the system is logged leaving an audit trail which can be reviewed at any time.

The ECS-1400 series transaction processors are intelligent units which will support up to 16 card readers, monitor 8 sensor inputs, and have 4 two-state outputs. If the communications between the ECS-1400 and the ECS-5000 are interrupted, the ECS-1400 can store up to 1000 transactions locally. All transactions are time stamped to allow a meaningful review of system activity at a later time.

The ECS-5000 software runs on a Sun SPARCstation. The database software used is Ingress. The system described in the survey was equipped with 16 MB of RAM and a 350 MB hard disk.

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2.1.27 Westinghouse Security Electronics

Westinghouse Security Electronics 5452 Betsy Ross Drive Santa Clara, CA 95054	Categorization Size: 101-500 employees Revenue: Over \$50,000,000
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Westinghouse returned surveys describing four different systems. Each can run in a stand-alone mode although some can be used as a subsystem of another. The four systems are the SE 6000, SE 5850, Alto 818 SX, and the SE 422. All systems combine alarm monitoring and access control functions.

The SE 6000 series is the latest in Westinghouse Security Electronics' access control security systems. These systems are designed to be readily expandable as needs demand. These systems feature central or distributed processing, color graphics, real-time alarm monitoring, user defined database records, full reporting capabilities, and remote diagnostics. Optional features include elevator control, time and attendance, and guard tours.

The SE 6000 series systems support a wide range of access control technologies such as proximity readers, magnetic stripe readers, keypads, CCTV and biometrics.

Alarms in the system are displayed in graphic form on site maps. Up to 1000 of these maps are supported. System capacities vary with the number of peripheral devices connected to the host and with a central or distributed system configuration.

The HP Vectra computers used in this system are running SCO UNIX on an 80386/25 machine with 16 MB of RAM and a 240 MB hard disk.

The SE 5850 is a PC based security management system that provides monitoring and database management for multiple Access Control Units (ACUs). The host computer allows the facility to be displayed on a series of maps showing all access control and sensor points. Alarms are shown on the monitor in graphic form with the alarm point flashing in the appropriate point on the map. Up to 1024 alarm points can be monitored with this system.

The access control portion of the system allows a maximum of 256 doors in 50 groups to be controlled. The maximum number of card holders that can be enrolled is 50,000.

System activity is logged leaving an audit trail of normal and alarm conditions, as well as administrative database changes.

This system will run on an HP Vectra 386s/25 equipped with 2 MB RAM and an 80 MB hard disk. The operating system used is MS DOS 5.0 or later.

The Alto 818 SX combines access control and alarm monitoring into one system. This system has the capacity to control up to 8 entrances. A maximum of 11,200 individually

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numbered Command Keys utilizing 120 access codes are supported. Alto 818 SX systems can be networked from a central location using either a SE 5850 or a SE 6000 Host System.

The SE 422 is a complete access control and alarm monitoring system for small or satellite applications with large system requirements. The SE 422 can support up to eight monitor input units and up to four relay output units for alarm monitoring capabilities. The access control unit can control two doors with any combination, or all, of the following multiple technology devices at each door: proximity sensors, magnetic stripe readers, and VIP-2 keypads. The SE 422 can operate stand-alone or can operate under the direction of an SE 6000 or SE 5850 security management system.

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2.2 FIRMS/PRODUCTS NOT INCLUDED IN THIS SURVEY

Several firms were contacted but were not included in the survey, based on three groups: (1) those firms contacted who declined to participate; (2) those firms contacted who agreed to participate but who then did not return the survey; and, (3) those firms who agreed to participate, examined the survey and determined that the scope was not applicable to their firm.

2.2.1 Firms Declining to Participate

The first group is made up of firms who were asked to participate but declined to participate in the survey. In many instances, the firm would decline upon determining from the initial contact that the survey would not be applicable to the firm's products.

Table 2.2	
FIRMS WHO DECLINED TO PARTICIPATE IN THE SURVEY	
Firm Name	Address
Advanced Engineering Concepts, Inc.	9515 Deereco Road, Suite 607 Timonium, MD 21093
Allison Systems	W226 N781 Eastmound Drive Waukesha, WI 53186
Casi-Rusco	1155 Broken Sound Parkway NW Boca Raton, Florida 33487
Checkpoint Systems	550 Grove Road P.O. Box 188 Thorofare, NJ 08086
Control Solutions Incorporated	13109 Turquoise NE Albuquerque, New Mexico 87123
DEC, SI Program Manager ADEG	7770 Jefferson Street, NE, Suite 100 Albuquerque, NM 87109
Fire Alarm & Systems Technology Incorporated	15004 Douglas Circle Omaha, Nebraska 68154
Hughes Security Systems	29947 Avenita de las Banderas Rancho Santa, CA 92688-2113
JWP Electronic Systems	6250 Village Parkway Dublin, CA 94568
Lantec	2131 University Avenue Berkeley, CA 94704
Linx Technologies	9000 Lurline Avenue Chatsworth, California 91311
Martin Marietta Information Systems	Mail Point 812 P.O. Box 590385 Orlando, FL 32859-0385
NCM Corporation	32 Lone Tree Court Milpitas, CA 95035
NCS Access Control	2266 North Second Street North St. Paul, Minnesota 55109

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Table 2.3 FIRMS WHO DECLINED TO PARTICIPATE IN THE SURVEY (Continued)	
Firm Name	Address
Securecom, Incorporated	477 Devlin Road Napa, California 94558
Texas Instruments	13542 North Central Expressway P.O. Box 655012, MS 372 Dallas, TX 75265
Vi Trac Incorporated	1310-K East Edinger Avenue Santa Ana, CA 92705
Wornall Electronics, Inc.	8901 Washington Street Kansas City, MO 64114

2.2.2 Firms Not Returning Survey

The second table groups those firms who were asked to and agreed to participate in the survey but then did not return a survey form. All of these firms were recontacted one or more times after the due date for the survey return.

Table 2.4 FIRMS WHO AGREED TO PARTICIPATE BUT DID NOT RETURN A SURVEY	
Firm Name	Address
ADT Security Systems	2560 Huntington Avenue Alexandria, Virginia 22303
Advantor Corporation	6101 Blake Ellenor Drive Orlando, FL 32819
Cardkey Systems Incorporated	101 West Cochran Street Simi Valley, California 93065-6217
Diebold Incorporated	4805 Kingston Street Denver, Colorado 80239
Falcon United Industries	7129 Gerald Avenue Van Nuys, CA 91406
Fire Burglary Instruments Inc.	153 Eileen Way Syosset, New York 11791-5302
Homes and Buildings Group	Honeywell 3320 Candelaris NE Albuquerque, New Mexico 87107
Isys Security Systems Incorporated	4462 Corporate Center Drive Los Alamitos, California 90720
Javelin Electronics	19831 Magellan Drive Torrance, California 90502
Lawrence Livermore National Laboratory	Safeguards and Security Department P.O. Box 808, L-191 Livermore, California 94551
Linear Corporation	2055 Corte del Nogal Carlsbad, California 92009

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Table 2.5 FIRMS WHO AGREED TO PARTICIPATE BUT DID NOT RETURN A SURVEY (Continued)	
Firm Name	Address
Litton Poly-Scientific	1213 North Main Street Blacksburg, Virginia 24060-9990
Lockwood Greene Technologies, Incorporated	1500 International Drive P.O. Box 1654 Spartanburg, SC 29304
Matrix Systems Incorporated	7550 Paragon Road P.O. Box 750038 Dayton, Ohio 45475
Radionics	1181 Overlook Ridge Road Diamondbar, CA 91765
SCC Incorporated	5710 Flatiron Parkway Boulder, Colorado 80301-5727
SCSI/Security Control Systems Incorporated	9000 Lurline Avenue Chatsworth, California 91311
Secom International Incorporated	9610 Bellanca Avenue Los Angeles, California 90045
Sonitrol	1800 Diagonal Road, Suite 180 Alexandria, VA 22314
Spectra Research Institute	1613 University Boulevard NE Albuquerque, New Mexico 87102-1710
Xetron Corporation	217 North Highway 81 Devine, Texas 78016

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2.2.3 Firms Determining Survey Not Applicable

The third group is made up of firms who agreed to participate but who examined the survey form and determined that their systems were outside the scope of the survey.

Table 2.6	
FIRMS WHO AGREED TO PARTICIPATE IN THE SURVEY BUT DID NOT HAVE AN APPLICABLE SYSTEM	
Firm Name	Address
ECSI-EAG International	23 Just Road Fairfield, NJ 07004
Flair Electronics Incorporated	650 West Foothill Boulevard Glendora, California 91740
Simplex Time Recorder Company	Building Systems Division 1 Simplex Plaza Gardner, Massachusetts 01441

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3. ANALYSES OF SURVEY RESULTS

3.1 INTRODUCTION

This section provides statistical analyses and graphs of the responses obtained to this survey.

3.1.1 Response Data Types and Level of Measurement

The overall survey was designed with the intent to answer a wide variety of questions about the existing state-of-the-art for integrated intrusion detection alarm and access control systems. Where unavoidable, some survey questions elicited answers which were only categorical in nature, consisting of nominal or ordinal data types,¹ which somewhat reduce the statistical tests and inference which can be made from the data. However, the survey questions also were constructed with analysis in mind, so that many provided for answers that constituted either binomial or ratio data.² These types allow more statistical tests.

3.1.2 Survey Population Limitations and Impact

Many statistical tests are based on the expectation that the sample population either (a) is a true "random" sample of the total target population or (b) is complete in representing all of the target population. Neither of these conditions can be assumed for this survey. Although an attempt was made to exhaustively contact all producers of integrated intrusion detection alarm and access control systems, Section 2 of this report reflects that only a little over 40 percent (40.6%) of the 69 firms originally queried by the survey team were found to have returned surveys. This level of response is not sufficiently close to the total to allow an inference that the data are truly representative of all producers in the industry. Thus, *statistical inferences made in this section can be taken to apply only in the context of the sample population of returned surveys and not necessarily as applicable to the entire population.*

¹Nominal scale data are the most primitive and consist of that which is "named" only and for which no other relation can be assumed. Ordinal scale data can be considered to be that representing direction or other grouping but without a clear interval as, for example, a set of answers "strongly agree"/"agree somewhat"/"neutral"/"disagree somewhat"/"strongly disagree" which reflect ordering but no consistent interval between points (i.e., it is not appropriate to suggest that the interval between "neutral" and "agree somewhat" is the same as that between "agree somewhat" and "strongly agree.")

²Binomial data consists of that which can be represented by two discrete values, such as "Yes/"No" or "True/False". This type of data is also referred to as *dichotomous* by some authors. It is handled similarly to ratio data. Such data can be handled using arbitrarily assigned values such as zero and one. Ratio data is that which is represented by both consistent intervals and a true zero point.

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3.1.3 Comments on Tests Used³

Most of the data sets are depicted by one or another form of frequency distribution graph. Although useful, these graphs sometimes can be misleading. With a relatively small sample population, small differences among the data may result in a graph that seems visually to depict trend(s) or bias that, on further analysis, is not significant. Where appropriate, various statistical tests⁴ were used to further analyze the data and provide greater insight.

3.2 RESPONDER CHARACTERIZATIONS

Figure 3.1 - Size and Gross Revenue Categorizations

³Specific test result numbers are reflected only where they materially enhance the report. Tests were accomplished using both Minitab and SAS statistical analysis packages running on an Intel 80486DX50 system. Raw data used for these tests and actual test results are available for review by interested parties.

⁴Tests included those for hypotheses about the mean and both the Pearson and Spearman correlation coefficients. Tests of hypotheses concerning the mean included both t and z test statistics, depending on the data. Generally, t was used in recognition that, for this survey, two points are generally true: (1) the sample is relatively small [usually less than 30 when nulls are excluded] and (2) the standard deviation σ (sigma) is not truly known. However, it is recognized that, for binomial data, some authors suggest z rather than t for sample populations with as low as 20 degrees of freedom.

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The survey requested information which allows a general characterization of the firms by both size and gross revenue.

Neither the Figure 3.1 graph presentation format nor its entries hide data. Inspection shows a clear grouping of responding firms in the \$1,000,000 to \$10,000,000 annual revenue category within the two categories spanning from 11 to 50 employees.

3.3 SYSTEM INFORMATION

The survey addressed a variety of integrated systems considerations. The following paragraphs provide the response analyses.

3.3.1 System Model

The following diagrams were used in the survey to depict two different models for integrating intrusion detection alarm and entry control systems. The survey recognized that neither model would be a perfect match for a specific system but that they did represent the two basic approaches.

3.3.1.1 Consolidated Model

In this model, all of the control, communications, display and annunciation functionality for both the intrusion detection alarm subsystem and for the entry control subsystem is centralized in a single system.

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The system is engineered to function as a single unit. Thus, the functionalities shown as separate processes in the Distributed Model (Alarm Primary Processor and Entry Control Primary Processor) would be incorporated in the "Consolidated Alarm/Entry Control Processor" block in this model.

3.3.1.2 Distributed Model

In this model, overall control, communications, display and annunciation functionality for both the intrusion detection alarm subsystem and for the entry control subsystem is centralized in a *front-end* system. This distributed model allows either the intrusion detection alarm or entry control system to be operated separately with full functionality for the subsystem should the central "consolidated alarm/entry control" processor malfunction.

3.3.1.3 Model Response Analyses

Survey respondents were asked to select the model which most closely approximated the model actually used for their integrated system. Figure 3.4 reflects the frequency of these responses.

The data are binomial and were assigned arbitrary values of 0 (consolidated model) and 1 (distributed model). A hypothesis for the mean could be 0.5000 (i.e., half the population for each model type). The actual observed mean is 0.4137 for a population of 29 responders (two others did not respond). The *t* test statistic for this data indicates that the difference between models visually depicted by the graph is not statistically significant.

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3.4 COMMUNICATIONS

The communications components represent a critical area for any security or entry control system. The questions in the communications section of the survey address various communications capabilities which may be present depending on the specific system architecture.

3.4.1 External Communications

The following section deals with issues related to those systems which support multiple concurrent installations (two or more systems working together) and/or which are capable of working with other computer systems.

Figure 3.5 - External Communication Support

Figure 3.5 reflects survey response frequencies for two questions that asked (1) whether the systems supported multiple concurrent installations and (2) whether the systems supported connection and interaction with other computer systems. The systems reported in this survey generally supported one or the other of these capabilities. However, only about two-thirds of the systems support both capabilities.⁵

⁵Both the Pearson and Spearman coefficients are computed at -0.196 with asymptotic standard errors of 0.062.

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3.4.1.1 External Communications Media and Protocols

The following section deals with how the systems communicate with outside entities, such as another system of the same type or with another computer system of a different type.

Figure 3.6 depicts the frequency distributions for the external communications physical media supported by the systems. As shown, almost all of the surveyed systems support twisted pair, while a majority also support fiber optic and/or coax. A small percentage support infrared.

⁶Several graphs will depict the category "other." For specifics of what was included in this category, refer to the detailed data in Section 4 of this report.

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Figure 3.7 illustrates which types of lower level (OSI model data link layer equivalent) protocols are supported by the systems for external communications. Almost all systems support some serial protocol and more than half support the Ethernet protocol.

Figure 3.8 reflects responses to the survey question of which type of higher level (OSI model network layer equivalent) protocols are supported by the systems for external communications. Proprietary protocols predominate. For open protocols, TCP/IP was the most prevalent with a number of system producers reflecting both a proprietary and TCP/IP support capability.

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3.4.1.2 External Communications Performance and Capacity

The survey also included questions that dealt with how well the systems performed in communicating with outside entities, such as another system of the same type or with another system of a different type.

Figure 3.9 illustrates the range of transmission speeds supported for external communications by the systems. The majority support 9.6 kilobaud with the second most common being 1 megabaud. Close to half the systems support 4.8 kilobaud while less than half support 19.2 kilobaud, 56 kilobaud, 10 megabaud, and other speeds such as 1200 and 2400 baud. None of the systems reported support for 256 kilobaud transmission speeds.

3.4.2 Internal Communications

The following section deals with how the systems communicate internally. For the purposes of the survey, the focus for internal communications was restricted to interaction between the consolidated alarm/entry control processor and the first level device(s) immediately connected to the control processor.

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3.4.2.1 Internal Communications Media and Protocols

The survey included several questions that dealt with how the system communicates with internal entities within the system, such as a collector/multiplexer, entry control local processor, or alarm primary processor.

Figure 3.11 - Lower Level Protocols

Figure 3.12 - Higher Level Protocols

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Figure 3.10 reflects the physical media supported by the systems for internal communications. As shown, almost all of the systems support twisted pair and fiber optic types of media. Approximately half of the systems support coax media while five systems support other types.

Figure 3.11 above illustrates response frequencies to questions concerning the type of lower level (OSI model data link layer equivalent) protocol(s) supported by the systems for internal communications. Almost all support some form of serial protocol, while about one third support Ethernet.

Figure 3.12 above shows which type of higher level (OSI model data network layer and higher equivalent) protocol(s) are supported by the systems for internal communications. Proprietary protocols dominate with only a few vendors supporting TCP/IP, NetBIOS, IPX and other types.

3.4.2.2 Internal Communications Performance and Capacity

The following section deals with the capabilities of internal communications.

Figure 3.13 reflects the transmission speeds supported for internal communications by the systems. 9.6 kb predominates with 1 mb and 4.8 kb next most prevalent. 19.2 kb, 10 mb, and other speeds are supported by a number of systems while 56 kb is supported by slightly fewer. As with the transmission speeds supported for external communications, there are no 256 kb speeds supported for the reported systems.

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Figure 3.14 illustrates the responses to the question of whether each event can be completely signaled over internal communications using a single message packet. Almost all of the systems reported support this capability, which is useful in minimizing the communications subsystem complexity and enhancing performance.

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Integrated Alarm Annunciation and Entry Control Systems

Figure 3.15 illustrates a range of the number which most closely approximates the maximum message packets the systems handle each second. As shown, most systems handle approximately 100 packets per second. The second most prevalent is 10 packets followed by 1000 packets per second. There were no systems which supported 1 packet, 10,000 packets, or 1,000,000 packets each second. It should be noted that three producers indicated theoretical packet transmission capabilities of 10,000,000 packets per second or greater.⁷ Each also indicated that they supported transmission rates at Ethernet or lower protocol speeds, that is, at less than or equal to 10-megabaud. Since this would result in packets consisting of one bit or less per packet, it may be that the vendors reporting extremely high rates did not fully understand the question, making these answers somewhat suspect. There was no statistically significant bias shown toward either measured or theoretical categories for responding system producers.

3.5 DATABASE AND REPORTING

The database and reporting aspects of the system support a variety of internal system, time based, and managerial analyses. For some systems, this functionality is referred to as "logging."

⁷This capability level was included for any vendors reporting high speed fiber optic circuitry support with FDDI protocols. None reported this capability.

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3.5.1 General Records Storage and Reporting

The nature of the security systems generally dictates the presence of some form of records storage and retrieval. *All* respondents to this survey indicated that their system(s) included some form of activity audit trail, records, logs, or other similar storage and reporting capability.

3.5.1.1 Database Support

Security system data can be well represented and handled using various database technologies. The following three subparagraphs address the basic hierarchical, network (plex) and relational technologies commonly found today.

Figure 3.16 displays the different architecture's supported by the security systems surveyed. It is evident that the hierarchical and relational architecture's are most common.

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3.5.1.1.1 HIERARCHICAL DATABASE SUPPORT

Figure 3.17 reflects the frequency distribution for three of four survey responses⁸ to questions concerning the systems with hierarchical database support. Many responders were able to provide data for the first two areas. However, the final question was performance related, asking how much time would be required to extract a single line of data from a 10,000 record database, given that all records had to be touched. Here, most responders indicated that they lacked data to answer the question. The three positive data responses reflected times of (a) two seconds, (b) greater than 10 seconds, and (c) 65 seconds. The results for the other questions are discussed in greater detail in the following paragraphs.

3.5.1.1.1.1 Maximum Records Supported

About one-third of the responders had either null or "unknown" as answers to the question concerning the maximum number of records supported by their hierarchical database management system implementation. Figure 3-18 provides a frequency grouping of responders who provided actual numbers of records supported. The total number of responders providing numeric answers is insufficient to support additional analysis.

⁸The fourth question pertained to *ad hoc* query capability. That frequency graph is located in figure 3.20.

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3.5.1.1.1.2 Maximum Fields Supported

Figure 3.19 - Total Fields Supported

Most responders were able to provide numeric data answering the question concerning the maximum number of fields per record supported by their hierarchical database management system implementation. Figure 3-19 provides a frequency grouping of responders who provided actual numbers of records supported. The total number of responders providing numeric answers is insufficient to support additional analysis.

Figure 3.20 - Ad Hoc Queries

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3.5.1.1.1.3 Ad Hoc Query Support

Figure 3.20 is concerned with whether the systems support the capability to accomplish *ad hoc* queries (e.g., via SQL). Test of the mean indicates that the greater yes answers are not sufficiently biased for this small sample to be significant. The surveyed systems using a hierarchical database did not appear to favor the presence or lack of an *ad hoc* query capability.

3.5.1.1.2 NETWORK (PLEX) DATABASE SUPPORT

Figure 3.21 illustrates frequency distributions for responders capability to answer questions about Network (also known as Plex) Database Support. The row on the far left reflects the maximum number of records supported by the security systems (one answer was "null" and the other was 1,000,000 records). As shown in the second row, only one responder gave an integer number for the maximum number of fields available per record (1,000 fields). The next row reflects the maximum number of pointers per record (one "null" answer and 100 pointers, respectively). The vendors were then asked if given a 10,000 record database, how many seconds (or, fractions of a second) are required to extract a single line of data assuming that all records must be touched. One vendor indicated that this information was not known. Both vendors indicated that their database implementation included an *ad hoc* query capability.

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3.5.1.1.3 RELATIONAL DATABASE SUPPORT

Figure 3.22 identifies the number of respondents that either quantified their relational database capabilities or did not know. As with the other database management system types, a large proportion of the vendors here also indicated a lack of general knowledge concerning the capabilities of their database systems. Responder knowledge ranged from about half providing positive answers to questions about the maximum tables supported to only three vendors having knowledge about the database system response times.

3.5.1.1.3.1 Maximum Relational Capabilities Supported

The survey asked questions designed to indicate the maximum relational database management system capabilities supported by the vendors using this data handling approach. Positive answers are reflected in the following table.

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Maximum Tables (Relations)	Maximum Variables (Attributes) per Table	Maximum Rows (Tuples) per Table	Maximum Tables Joined for Single Query	Time in Seconds to Extract Single Record from Two Joined 10,000 Row Tables
10,000+	255	unknown	unknown	10 milliseconds
unlimited	254	unlimited	7	14 milliseconds
10	10	65 K	unknown	unknown
256	unknown	unanswered	unknown	unknown
3	unknown	2 billion	3	unknown
64,000 events ⁹	64,000 events ⁸	64,000 events ⁸	8	1 second
32768	255	other	16	unknown

3.5.1.1.3.2 Ad Hoc Query Support

Figure 3.23 shows that all but four of the systems surveyed supported the capability to accomplish *ad hoc* queries (e.g., by use of SQL) by use of a single query for multiple tables with logical qualifications. Since this is a cornerstone capability for a relational database management system, a "No" answer may indicate that the responder reported on a system which was only partially relational or chose not to provide this capability to the user.

⁹The fact that the question was answered in terms of "events" rather than actual number of tables, variables and rows may indicate that the responder did not understand the specifications for a relational database management system.

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3.5.1.2 Log and Report Generation

Figure 3.24 illustrates the response frequencies of categories for system generation of reports. As shown, all of the systems support paper and CRT/Display capability. More than half of the systems also support file capability.

Figure 3.25 deals with the forms or methods of log and report generation supported by the systems. As illustrated, most of the systems support preprogrammed, preformatted and ad hoc forms.

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3.6 SYSTEM RELIABILITY

Figure 3.26 reflects the frequency answers for the systems that claimed to possess some level of planned high reliability for hardware and software. Three of the 30 total systems answered this question "No." The survey also contained additional questions to examine the issue of what level of planned reliability had been implemented by vendors.

3.6.1 Fault Tolerance

In recent years, the term "fault tolerance" has become overloaded. For the purposes of this survey, the term "fully fault tolerant" was defined to mean that the underlying

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hardware and operating system software had been engineered to preclude any *single point-of-failure*. Figure 3.27 illustrates the frequency responses to two questions concerning fault tolerance. The first asked whether the system resided on an underlying hardware/software platform which is fully fault tolerant. The second asked whether the security applications software was engineered for fault tolerant operation on its platform.

3.6.2 High Reliability

Fully fault tolerant systems are expensive and not necessarily appropriate for all applications. The survey addressed factors which are usually present in fully fault tolerant systems but which also may be separately engineered within the system to increase reliability.

3.6.2.1 Multiprocessor Platform

Figure 3.28 illustrates the capabilities supported by the systems to operate on a multiprocessor hardware platform (one with more than a single CPU collocated in the same physical enclosure). As shown, more than half of the systems do not possess this capability. This would generally be considered a precursor condition to the next question (illustrated at Figure 3.29) that asked whether the system could continue to operate if it lost one of the CPU's. That question differentiated between whether the system could

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operate with the bad CPU in place and/or with it removed. As shown, more than half of the systems were reported to possess this capability.

3.6.2.2 Memory Capabilities

Figure 3.30 depicts the frequency responses to two storage related questions. The first question addressed whether the system possessed the capability to operate with multiple main memory boards collocated within the same enclosure. This feature is a precursor to allow continued operation of the system when some part of main memory fails. For those reporting such a capability, a follow-on question (frequency graphed at Figure 3.31)

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examined the issue of whether the system could be operated with and/or without the failed memory board in place.¹⁰

The second question (illustrated at Figure 3.30) addressed whether the system supported operation with mirrored rigid disks. Mirrored disk technology allows duplicate changes to be recorded in an essentially simultaneous manner between a pair of disks.

3.6.2.3 Network and Power Reliability Considerations

Two other reliability-related questions addressed network and power considerations. The first question asked whether the system included support for multiple network cards, with response frequencies illustrated at Figure 3.32. That question differentiated between support for cards of the same protocol and/or for a different protocol. The distribution reflected that about two-thirds of the systems possessed the capability to support one or both configurations.

¹⁰The intent here was to differentiate among systems with the inherent capability to recognize available memory at the operating system or auto configuration level, such that the system could be rapidly auto configured for continuing operation should a segment of memory fail system tests.

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The final question asked in the high reliability area dealt with whether the system was specifically engineered to provide enhance power supply reliability. The response frequencies are depicted at Figure 3.33.

Figure 3.32 - High Reliability / Network Cards

Enhanced Power Supply Reliability

Figure 3.33 - High Reliability / Power Supply

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3.6.3 General Reliability

The survey also asked two questions concerning general reliability of the systems. The first was, "Given what you feel to be a typical installation, what is the expected Mean-Time-Between-Failure in hours once the system has been installed, is stabilized and under maintenance?" This question was of interest in determining what claims system producers could make concerning the overall reliability of their installations. The second question, "For this MTBF, what do you expect for a standard deviation?" addressed the issue of whether the MTBF represented a peaked distribution, such that most failures occurred at or about the mean value, as opposed to a grouping of very high and very low values.

Figure 3.34 illustrates the response frequencies to these two questions. Only nine of the 30 systems reported positive data for the first question dealing with system mean-time-between-failure (MTBF), with the remainder reporting "unknown" (15 responses) or no answer (6 responses). The hour ranges reported represent 1.14 years (10,000 hours) to 9.7 years (54312 hours). The second question showed only three positive responses, with two being percentage answers that were unclear in interpretation from the standpoint of the usual definition for standard deviation.

MTBF (Hours)	Standard Deviation
10000	Unknown
13416.6	Unknown
50000	Unknown
30000	Unknown
26208	10%
54312	Unknown
17520-35040	Unknown
20000	97%
10000	500

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3.7 PRIORITIZATION, EVENT STATES AND EVENT HANDLING

Regardless of the engineered approach, security systems ultimately deal with real world events and portray some interaction(s) with the real world. These events may, for example, be initiated by the activation of a sensor or by the swipe of a card through a card reader.

3.7.1 Prioritization

Event (or state change) prioritization is the capability for a system to handle events based on some predetermined ranking. Figure 3.35 shows the number of systems which permit assignment of priorities to various field events. It can be seen that most of the systems allow these assignments to be made.

3.7.2 Event States

Event states are the discrete changes which can be handled by the system. For example, a switch system's event states may be as few as two ("on" and "off") while an alarm system may handle several states (e.g., secure, access, alarm, test, etc.). Figure 3.36 shows the number of alarm states which are supported by different functions in different areas of the system. It can be seen that systems support between 4 and 8 alarm states for most areas in question. Figure 3.37 shows the responses to a similar question about entry control states. Most of the surveyed systems reported support for between 8 and 16 entry control states for each of the areas in question.

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3.7.3 Event Handling

Several areas related to event handling are of interest for an integrated system. Figure 3.38 shows how the majority of systems override the intrusion alarm generated when a door opens during a successful access attempt. Most systems mask the alarm in software but some systems allow this masking of alarms to be done in software or hardware. Figure 3.39 shows that most systems allow access based upon the date/day, time, and location. The highest time resolution supported for access is 0.1 second although the most common resolution was 1.0 second. This is shown in Figure 3.40.

Figure 3.38 - Are intrusion alarms overridden on access by use of hardware at the sensor or by use of software at a more remote processor location?

Figure 3.39 - Does the entry control subsystem provide for various categories of access?

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Figure 3.40 - Time resolution for access control

After a successful entry through a controlled door, the door must close letting the system "reset" for the next access attempt. Most systems will alarm if the door does not close after a certain amount of time has passed. Figure 3.41 shows that most systems support this capability with a variable time interval. Figure 3.42 displays another access control feature common to these systems. Most systems will allow multiple access attempts in the event that the first few tries are not successful. However, these systems usually have a limit on the number of unsuccessful attempts which can be made. It can be seen that for most systems this number is a variable. Many of the respondents who selected "other" qualified this by noting that the number of unsuccessful attempts varied with the access control device used.

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Figure 3.41 - Access Control Alarm Features

Figure 3.42 - Number of unsuccessful access attempts allowed by the system

Another event which is supported by many systems is the "duress" alarm. Figure 3.43 displays the number of systems which support a duress code of some type.

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Figure 3.43 - System support of duress codes

3.8 USER INTERFACE

Some users feel that the user interface to the system is one of the most important factors.

3.8.1 Input Devices

Figure 3.44 graphs several input devices against the number of systems which support them. The two most common input devices are the keyboard and the mouse.

Figure 3.44 - System user input

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Some types of operator inputs could result in the system being compromised. One way of reducing this possibility is to implement a "two-person" rule for these system inputs. Figure 3.45 shows the number of systems which support a two-person rule for various operator actions.

Figure 3.45 - Two person rule implemented for system modification and/or override

3.8.2 Displays

3.8.2.1 Formats and Resolutions

Most systems use a CRT or video monitor to display information to the operator. Survey participants were asked to list the highest display resolution supported by their system. Figure 3.46 shows that the most common resolution supported was 1024 x 768. The second most common resolution was 800 x 600. Information for the operator can also be presented audibly. Figure 3.47 shows the degree of support systems have for each of several types of audio outputs.

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Figure 3.46 - Display Resolution

Figure 3.47 - Audio outputs supported by the system

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3.8.2.2 Presentation

Information on a display can be presented through text, graphics, or any combination of the two. Figure 3.48 shows the degree of support systems have for each of the many types of visual data.

Figure 3.48 - Data presentation to the operator

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3.8.2.3 Entry Control External Interface Capabilities

The survey listed several entry control devices and respondents were asked to indicate if they could interface with and/or if they could display an icon for that device. Figure 3.49 displays the results in a frequency graph.

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3.8.2.4 Intrusion Detection Alarm External Interface Capabilities

The survey listed several intrusion detection devices and respondents were asked to indicate if they could interface with and/or if they could display an icon for that device. This interface could be through a separate processor, collector or multiplexer. Figure 3.50 displays the results in a frequency graph.

Figure 3.50 - Intrusion detection sensors which are supported

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3.8.2.5 CCTV Capabilities

Figures 3.51 through 3.54 show capabilities which some systems possess to interact with CCTV and associated systems. This interaction may be direct or via a camera switching device. Figure 3.51 reflects responses concerning the systems' ability to interface with and display icons of fixed CCTV and Pan-Tilt-Zoom CCTV cameras. Most systems will interface to both. Although most systems will interface to cameras, less than half of them are able to display icons of the cameras on the display. Some systems have no ability to interface to cameras. Figure 3.52 displays the response count to the question "How many CCTV cameras (fixed or PTZ) can be controlled by your security system?" The responses ranged from zero to greater than 2048. The most common response was greater than 128 but less than or equal to 512.

Figure 3.51 - CCTV interface capabilities

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Figure 3.52 - CCTV interface

Another device which is often used in these types of systems is a video recorder. The respondents were asked to indicate which video recorder functions could be directly controlled by their system. Their responses are shown in Figure 3.53. Figure 3.54 indicates the number of systems which support video frame grabbers and video printers.

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Figure 3.53 - Video recorder control

Figure 3.54 - Frame grabber support

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3.8.3 Modifications

Some system features can be modified by the end-user. These are shown in Figure 3.55. Most systems allow end-user modification of graphics and preprogrammed responses.

Figure 3.55 - Supported user modifications

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3.9 SYSTEM PERFORMANCE AND CAPACITY

The following section deals with how rapidly a system processes events. The "system" for purposes of response is taken to be the central processing element and the network immediately associated therewith. The survey questions in this section addressed three conditions, described in A, B, and C below.

A. "No-Load" System

In a "no-load" system, the system would be expected to be idle and then process only the single event indicated.

B. "5-Simultaneous Event" System

In a "5-simultaneous event" system, the system would be expected to be processing four other events when the stimulus was received for the fifth event. The questions pertained to the time to process that fifth event.

C. "25-Simultaneous Event" System

In a "25-simultaneous event" system, the system would be expected to be processing 24 other events when the stimulus was received for the 25th event. The questions pertained to the time to process that 25th event.

Figures 3.56 through 3.62 correspond to each of the questions from this section of the survey. The questions asked for the length of time necessary to complete a particular system task for each of the three conditions mentioned above. The responses were grouped into the time intervals $t \leq 0.5$, $0.5 < t \leq 1.0$, $1.0 < t \leq 2.0$, and $t > 2.0$. All of these time measurements are in seconds. Three other responses were possible, the feature is not a capability of the system, the time interval is not known, or there is no response to the question.

Figure 3.56 illustrates the responses to the question "What is the time interval from the receipt of a stimulus event on the internal network, to process an event and change the display on-screen indicator (e.g., icon) of an event from one state indicator to another, visually signaling the event to the operator?"

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Descriptive statistics¹¹ for positive answers are shown in the following table. The most frequent response for a "No Load System" was one second, representing about 34.8% of the positive responses. Similar results are observed for the 5-event question. However,

Time for Change of Icon in Response to Event							
QUESTION CLASS	NUMBER POSITIVE ANSWERS	ARITHMETIC MEAN	MEDIAN	STANDARD DEVIATION	STANDARD ERROR OF MEAN	MINIMUM	MAXIMUM
No Load	23	0.969	1.000	0.756	0.158	0.100	3.000
5-Events	20	1.635	1.000	1.443	0.323	0.200	5.000
25-Events	19	3.580	2.000	5.490	1.260	0.300	25.000

¹¹Some responses were modified to allow a single discrete entry for statistical computation. Entries indicated as less than some value were accorded a slightly lesser value (e.g., "<5" was entered as 4.5). Range entries were entered as their midpoint (e.g., "1-3" was entered as 2).

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the 25-event question responses showed a significant increase in time to handle the icon change.¹²

Figure 3.57 illustrates the responses to the question "What is the time interval from the receipt of a stimulus event on the internal network (from annunciator to collector/multiplexer/etc. but not necessarily to sensor) to process and change both the entire display screen (e.g., depict a new map) and also the on-screen indicator of that event from one state indicator to another, visually signaling the event to the operator?"

Again, the most frequent response for a "No Load System" was one second. However, the 5-event and 25-event questions produced central values around two seconds. Descriptive statistics for positive answers are shown in the following table.

¹²There is a general shift in grouping from about one second to about two seconds. However, for this and some other 25-event load questions, a single responder reported either "25" or "<25", both of which are singularly large in comparison to other values. With the relatively low number of positive responses, this single value caused some positive shifting in the arithmetic means for the 25-event questions.

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Response Descriptive Statistics Time for Change of Entire Screen in Response to Event							
QUESTION CLASS	NUMBER POSITIVE ANSWERS	ARITHMETIC MEAN	MEDIAN	STANDARD DEVIATION	STANDARD ERROR OF MEAN	MINIMUM	MAXIMUM
No Load	18	1.519	1.000	1.105	0.261	0.100	4.900
5-Events	16	1.656	1.900	0.800	0.200	0.200	3.000
25-Events	16	2.721	2.000	2.050	0.512	0.250	7.200

Figure 3.58 shows the responses to the question, "For a typical installation of your security system, what is the time from receipt of a stimulus event at a remote sensor to process and change both the entire display screen (e.g., depict a new map) and the on-screen indicator of that event (e.g., an icon) to visually signal that event to the operator?"

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"No Load System" responses averaged a little over one second, with the 5-event and 25-event responses both showing median values of 2 seconds. Descriptive statistics for positive answers are shown in the following table.

Response Descriptive Statistics							
Time for Change of Entire Screen in Response to Event at Remote Sensor							
QUESTION CLASS	NUMBER POSITIVE ANSWERS	ARITHMETIC MEAN	MEDIAN	STANDARD DEVIATION	STANDARD ERROR OF MEAN	MINIMUM	MAXIMUM
No Load	16	1.343	1.000	0.736	0.184	0.200	3.000
5-Events	16	2.500	1.950	3.389	0.847	0.300	14.900
25-Events	15	3.830	2.000	5.990	0.550	.8000	24.900

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Figure 3.59 depicts responses to the question, "What is the time from the receipt of a stimulus event on the internal network (from annunciator to collector/multiplexer/etc. but not necessarily to sensor) to process and activate a sound generating device or speaker, audibly signaling the event to the operator?"

Responses grouped around 1-second for the "No Load" and, with a slight increase bias, similarly for the 5-event question. The 25-event question was characterized by responses that were grouped toward 2-seconds.

Time for Activation of Sound Generating Device							
QUESTION CLASS	NUMBER POSITIVE ANSWERS	ARITHMETIC MEAN	MEDIAN	STANDARD DEVIATION	STANDARD ERROR OF MEAN	MINIMUM	MAXIMUM
No Load	17	1.085	1.000	0.682	0.166	0.300	3.000
5-Events	15	1.570	1.000	1.149	0.297	.0500	4.900
25-Events	14	3.880	1.870	6.360	1.700	0.250	24.900

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Figure 3.60 displays responses to a question pertaining to the time interval from the receipt of a stimulus event on the internal network, to process and activate a live CCTV display of the event area.

Data grouped at 1-second to 1.5-seconds for the positive responses.

Response Descriptive Statistics Time to Activation of Live CCTV Image							
QUESTION CLASS	NUMBER POSITIVE ANSWERS	ARITHMETIC MEAN	MEDIAN	STANDARD DEVIATION	STANDARD ERROR OF MEAN	MINIMUM	MAXIMUM
No Load	11	1.263	1.000	1.333	0.402	0.100	4.900
5-Events	11	1.482	1.500	1.298	0.391	0.150	4.900
25-Events	11	2.109	1.150	1.814	0.547	0.150	5.500

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Figure 3.61 displays the responses to the following question, "What is the time necessary from the receipt of a stimulus event on the internal network, to process and activate a recording of the CCTV display of the event area?"

Data again grouped at or slightly above the 1-second point, in this case for all three questions.

Response Descriptive Statistics Time to Activate CCTV Image Recording							
QUESTION CLASS	NUMBER POSITIVE ANSWERS	ARITHMETIC MEAN	MEDIAN	STANDARD DEVIATION	STANDARD ERROR OF MEAN	MINIMUM	MAXIMUM
No Load	10	1.250	1.000	1.392	0.440	0.100	4.900
5-Events	10	1.375	1.075	1.368	0.433	0.100	4.900
25-Events	11	2.055	1.000	1.827	0.551	0.150	5.500

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Figure 3.62 shows the responses the question "What is the time interval from the receipt of a stimulus event on the internal network, to process (including verification) and activate a door/portal release?"

Data grouped around the 1-second point.

Response Descriptive Statistics Time to Process and Activate Door or Portal Release							
QUESTION CLASS	NUMBER POSITIVE ANSWERS	ARITHMETIC MEAN	MEDIAN	STANDARD DEVIATION	STANDARD ERROR OF MEAN	MINIMUM	MAXIMUM
No Load	17	0.832	0.600	0.708	0.172	0.200	3.000
5-Events	16	1.184	0.825	1.252	0.313	0.250	4.900
25-Events	16	1.399	0.950	1.378	0.344	0.250	4.900

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3.10 SYSTEM CONFIGURATION

The following figures display information concerning the systems which would meet the performance levels specified in the previous section.

The systems represented in the survey operate on personal computers, minicomputers, and mainframe computers. Figure 3.63 shows that of all the types of computers used, the most common is the personal computer.

The survey respondents were asked to provide more information on the computers used in their systems. They were asked to identify the type of CPU, give the amount of RAM and hard disk space, and to identify the operating system. These responses are shown in Figures 3.64 through 3.67.

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4. SURVEY DETAIL TABLES

4.1 INTRODUCTION

This report section provides detail tables of the integrated alarm annunciation and entry control systems survey results. The survey addressed eight major parameter areas:

- ♦ **Firm Characterization Data.** This area dealt with considerations involving the demographics for the survey.
- ♦ **System Model and Communications Data.** This area dealt with considerations involving the two different models for integrating intrusion detection alarm and entry control system and the various communication capabilities in a system.
- ♦ **Database and Reporting Data.** This area dealt with considerations involving the various database technologies and reporting capabilities.
- ♦ **System Reliability Data.** This area dealt with considerations involving the hardware and software reliability of a system.
- ♦ **Prioritization, Event States and Event Handling Data.** This area dealt with considerations involving prioritization of events based on predetermined ranking; discrete changes of event states handled by a system; and event handling for an integrated system.
- ♦ **User Interface Data.** This area dealt with considerations involving the interaction between the human operator and the system.
- ♦ **System Performance and Capacity Data.** This area dealt with considerations involving how rapidly a system processes events.
- ♦ **System Configuration.** This area dealt with considerations involving the setup or configuration of a system.

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4.2 FIRM CHARACTERIZATION DATA

Firm Name	Firm Short Name	Firm Size (Number of Employees)	Firm Annual Revenue
Assessment and Control Incorporated	Assessment	11-25	\$10,000,001-\$25,000,000
Asset Control Systems	Asset Contrl	1-10	\$250,000-\$1,000,000
Campbell Engineering Company	CECO	26-50	\$1,000,001-\$10,000,000
Control Systems International	CSI	101-500	\$25,000,001-\$50,000,000
DAQ Electronics Incorporated	DAQ	101-500	\$10,000,001-\$25,000,000
DSX Access Systems Incorporated	DSX	11-25	\$1,000,001-\$10,000,000
Edicon Systems Division	Edicon	101-500	\$25,000,001-\$50,000,000
ENSEC Incorporated	ENSEC	101-500	\$25,000,001-\$50,000,000
Epic Data	Epic Data	101-500	\$25,000,001-\$50,000,000
Hirsch Electronics Corporation	Hirsch	26-50	\$1,000,001-\$10,000,000
Logiplex Corporation	Logiplex	11-25	\$1,000,001-\$10,000,000
MARTEK/Scientific Approaches	MARTEK	1-10	\$1,000,001-\$10,000,000
Monitor Dynamics Incorporated	MDI	51-100	\$1,000,001-\$10,000,000

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Mosler Incorporated	Mosler	over 1000	over \$50,000,000
Northern Computers Incorporated	Northern Computers	26-50	\$10,000,001-\$25,000,000
Proprietary Controls Systems Corporation	PCSC	26-50	\$1,000,001-\$10,000,000
SAIC-Security Systems Division	SAIC	over 1000	over \$50,000,000
Sensormatic Electronic Corporation	Sensormatic	over 1000	over \$50,000,000
SMF Systems Corporation	SMF	11-25	\$1,000,001-\$10,000,000
Software House	Software House	26-50	\$10,000,001-\$25,000,000
Stellar Security Products Incorporated	Stellar	11-25	\$1,000,001-\$10,000,000
Sygnatron Protection Systems Incorporated	Sygnatron	11-25	\$250,000-\$1,000,000
Synergistics Incorporated	Synergistics	26-50	\$1,000,001-\$10,000,000
Tate Integrated Systems	Tate	26-50	\$1,000,001-\$10,000,000
Vikonics Incorporated	Vikonics	26-50	\$1,000,001 - \$10,000,000
Vindicator Incorporated	Vindicator	26-50	\$1,000,001-\$10,000,000
Westinghouse Security Electronics	Westinghouse	101-500	over \$50,000,000

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4.3 SYSTEM MODEL AND COMMUNICATIONS DATA

II.A(1) - Does your system support multiple concurrent installations?

II.A(2) - Does your system support connection and interaction with other computer systems?

Firm Short Name	System Name	System Model	II.A(1)	II.A(2)
Assessment	System 9000	Distributed	Yes	Yes
Asset Contrl	ACS-100	Consolidated	Yes	Yes
CECO	Auto-Guard	Distributed	Yes	Yes
CSI	I/NET	Distributed	Yes	Yes
DAQ	Starwatch	Distributed	Yes	Yes
DSX	DSX-1030	Consolidated	Yes	Yes
Edicon	Envoy 7000	Consolidated	Yes	Yes
ENSEC	ES2000 <i>Plus</i>	Consolidated	Yes	Yes
Epic Data	SMS	Consolidated, Distributed	Yes	Yes
Hirsch	Digitrack Models	Consolidated, Distributed	Yes	Yes
Logiplex	Logiplex System	Unanswered	Yes	Yes
MARTEK	Graphic Link	Distributed	Yes	Yes
MDI	SAFENet	Distributed	Yes	Unanswered

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Mosler	LINX	Distributed	Yes	Yes
Northern Computers	PC-PAC	Distributed	Yes	Yes
PCSC	Linc Net	Consolidated	Yes	Yes
SAIC	SAISMS	Distributed	Yes	Yes
Sensormatic	AC500	Consolidated	No	Yes
SMF	ACS51	Consolidated	Yes	Yes
Software House	C-CURESystem 1 Plus	Consolidated	Yes	Yes
Stellar	MCM-1000	Consolidated	Yes	Yes
Sygnatron	Sygneplex	Consolidated	Yes	No
Synergistics	WA-PAC	Unanswered	No	Yes
Tate	TIS4000	Distributed	Yes	Yes
Vikonics	VISIDS 3500	Consolidated	Yes	No
Vindicator	ECS-5000	Distributed	Yes	No
Westinghouse	SE5850	Consolidated	No	Yes
Westinghouse	SE6000	Distributed	unanswered	Yes
Westinghouse	Alto 818SX	Consolidated	No	Yes
Westinghouse	SE422	Consolidated	No	Yes

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II.A.1(1) - Which physical media are supported by your system for external communications?

II.A.1(2) - Which type of lower level (OSI model data link layer equivalent) protocol(s) are supported by your system for external communications?

II.A.1(3) - Which type of higher level (OSI model data network layer equivalent) protocol(s) are supported by your system for external communications?

Firm Short Name	System Name	II.A.1(1)	II.A.1(2)	II.A.1(3)
Assessment	System 9000	twisted pair, fiber optic	serial	proprietary
Asset Contrl	ACS-100	twisted pair	serial	proprietary
CECO	Auto-Guard	coax, twisted pair, fiber optic, radio frequency	serial, ethernet	TCP/IP, NetBIOS
CSI	I/NET	coax, twisted pair, fiber optic, radio frequency	serial, ethernet, other	NetBIOS, proprietary
DAQ	Starwatch	coax, twisted pair, fiber optic, radio frequency, infrared, other	serial, ethernet, token ring	TCP/IP, NetBIOS
DSX	DSX-1030	twisted pair, fiber optic, radio frequency	serial, ethernet, token ring	NetBIOS, IPX
Edicon	Envoy 7000	coax, twisted pair, fiber optic, other	serial, ethernet, token ring	TCP/IP, NetBIOS, IPX
ENSEC	ES2000 <i>Plus</i>	coax, fiber optic	serial, ethernet	TCP/IP, proprietary, other
Epic Data	SMS	coax, twisted pair, fiber optic, radio frequency, other	serial, ethernet, other	TCP/IP, proprietary
Hirsch	Digitrack Models	coax, twisted pair, fiber optic, radio frequency, infrared	serial, ethernet	TCP/IP, NetBIOS, IPX
Logiplex	Logiplex System	coax, twisted pair, fiber optic, radio frequency, infrared	serial, ethernet, token ring	TCP/IP, proprietary
MARTEK	Graphic Link	coax, twisted pair, fiber optic, radio frequency, infrared, other	serial	proprietary
MDI	SAFENet	coax, twisted pair, fiber optic, radio frequency, infrared, other	serial, other	TCP/IP, proprietary

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	twisted pair	serial	proprietary
Northern Computers	PC-PAC	coax, twisted pair, fiber optic, radio frequency	serial, ethernet	NetBIOS
PCSC	Linc Net	twisted pair	ethernet	NetBIOS
SAIC	SAISMS	coax, twisted pair, fiber optic	serial, ethernet	NetBIOS, proprietary
Sensormatic	AC500	twisted pair, fiber optic	serial, ethernet	TCP/IP
SMF	ACS51	coax, twisted pair, fiber optic, other	serial, ethernet	TCP/IP, proprietary
Software House	C-CURESystem 1 Plus	coax, twisted pair, fiber optic	serial, ethernet	TCP/IP, other
Stellar	MCM-1000	twisted pair, fiber optic, radio frequency	other	proprietary
Sygnatron	Sygneplex	coax, twisted pair	serial, ethernet	proprietary
Synergistics	WA-PAC	twisted pair	serial	proprietary
Tate	TIS4000	coax, twisted pair, fiber optic, radio frequency	serial, ethernet	TCP/IP, other
Vikonics	VISIDS 3500	twisted pair, fiber optic	serial, ethernet	TCP/IP, proprietary
Vindicator	ECS-5000	twisted pair, fiber optic, radio frequency, other	serial	proprietary
Westinghouse	SE5850	twisted pair, fiber optic, other	serial	proprietary
Westinghouse	SE6000	coax, twisted pair, fiber optic	serial, ethernet	TCP/IP
Westinghouse	Alto 818SX	twisted pair	serial, other	proprietary
Westinghouse	SE422	twisted pair, fiber optic	serial	proprietary

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

II.A.2(1) - What transmission speeds are supported for external communications?

II.B.1(1) - Which physical media are supported by your system for internal communications?

II.B.1(2) - Which type of lower level (OSI model data link layer equivalent) protocol(s) are supported by your system for internal communications?

Firm Short Name	System Name	II.A.2(1)	II.B.1(1)	II.B.1(2)
Assessment	System 9000	9.6 kb, other	twisted pair, fiber optic	serial
Asset Contrl	ACS-100	9.6 kb	twisted pair	serial
CECO	Auto-Guard	9.6 kb, 19.2 kb	coax, twisted pair, fiber optic	serial, ethernet
CSI	I/NET	4.8 kb, 9.6 kb, 19.2 kb, 56 kb, 10 mb	coax, twisted pair, fiber optic	serial, ethernet, other
DAQ	Starwatch	4.8 kb, 9.6 kb, 19.2 kb, 56 kb, 256 kb, 1mb, 10 mb	twisted pair, fiber optic, other	serial
DSX	DSX-1030	4.8 kb, 9.6 kb, 19.2 kb, 56 kb, 10 mb	twisted pair, fiber optic	serial
Edicon	Envoy 7000	4.8 kb, 9.6 kb, 56 kb, 1 mb, 10 mb	coax, twisted pair, fiber optic	serial, ethernet, token ring
ENSEC	ES2000 <i>Plus</i>	4.8 kb, 9.6 kb, 19.2 kb, 10 mb	coax, twisted pair, fiber optic	serial, ethernet
Epic Data	SMS	4.8 kb, 9.6 kb, 19.2 kb, 10 mb	coax, twisted pair, fiber optic	serial, ethernet
Hirsch	Digitrack Models	4.8 kb, 9.6 kb, 19.2 kb, 56 kb, 256 kb, 1 mb, 10 mb, other	twisted pair, fiber optic	serial
Logiplex	Logiplex System	4.8 kb, 9.6 kb, 10 mb	coax, twisted pair, fiber optic	serial, ethernet, token ring
MARTEK	Graphic Link	4.8 kb, 9.6 kb, 19.2 kb, other	coax, twisted pair, fiber optic, other	serial
MDI	SAFENet	4.8 kb, 9.6 kb, 19.2 kb, 56 kb, 256 kb	coax, twisted pair, fiber optic, other	serial, other

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	4.8 kb, 9.6 kb, 19.2 kb, 56 kb	coax, twisted pair, fiber optic, other	serial, token ring, other
Northern Computers	PC-PAC	9.6 kb	coax, twisted pair, fiber optic	serial, ethernet
PCSC	Linc Net	1 mb, 10 mb	twisted pair	other (PCSC proprietary)
SAIC	SAISMS	19.2 kb, 10 mb	coax, twisted pair, fiber optic	serial, ethernet
Sensormatic	AC500	9.6 kb, 10 mb	twisted pair, fiber optic	serial
SMF	ACS51	4.8 kb, 9.6 kb, 19.2 kb	coax, twisted pair, fiber optic	serial, ethernet
Software House	C-CURESystem 1 Plus	4.8 kb, 9.6 kb, 19.2 kb	twisted pair, fiber optic	serial
Stellar	MCM-1000	4.8 kb	twisted pair, fiber optic	other (proprietary protocol, RS422)
Sygnatron	Sygneplex	19.2 kb	coax, twisted pair, fiber optic	serial, ethernet
Synergistics	WA-PAC	19.2 kb	twisted pair	other (X.25)
Tate	TIS4000	4.8 kb, 9.6 kb, 19.2 kb, 56 kb, 256 kb, 1 mb, 10 mb	coax, twisted pair, fiber optic	serial, ethernet
Vikonics	VISIDS 3500	9.6 kb, 10 mb, other	twisted pair, fiber optic	serial
Vindicator	ECS-5000	9.6 kb	twisted pair, fiber optic, other	serial
Westinghouse	SE5850	4.8 kb, 9.6 kb	twisted pair, fiber optic	serial
Westinghouse	SE6000	4.8 kb, 9.6 kb, 10 mb	twisted pair, fiber optic, other	serial, ethernet
Westinghouse	Alto 818SX	4.8 kb, 9.6 kb	coax, twisted pair	serial, other
Westinghouse	SE422	4.8 kb, 9.6 kb	coax, twisted pair, fiber optic	serial, other

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

II.B.1(3) - Which type of higher level (OSI model data network layer equivalent) protocol(s) are supported by your system for internal communications?

II.B.2(1) - What transmission speeds are supported for internal communications?

II.B.2(2) - Can each and every event be completely signaled over internal communications using a single message packet?

Firm Short Name	System Name	II.B.1(3)	II.B.2(1)	II.B.2(2)
Assessment	System 9000	proprietary	9.6 kb, other	Yes
Asset Contrl	ACS-100	proprietary	4.8 kb, 9.6 kb	Yes
CECO	Auto-Guard	proprietary	9.6 kb, 19.2 kb	Yes
CSI	I/NET	NetBIOS	4.8 kb, 9.6 kb, 19.2 kb, 56 kb, 10 mb	Yes
DAQ	Starwatch	proprietary	4.8 kb, 9.6 kb, 19.2 kb	Yes
DSX	DSX-1030	unanswered	9.6 kb	Yes
Edicon	Envoy 7000	TCP/IP, NetBIOS, IPX	9.6 kb, 56 kb, 10 mb, other	Yes
ENSEC	ES2000 <i>Plus</i>	TCP/IP, other	4.8 kb, 9.6 kb, 19.2 kb, 10 mb	Yes
Epic Data	SMS	TCP/IP, proprietary	4.8 kb, 9.6 kb, 19.2 kb, 10 mb	Yes
Hirsch	Digitrack Models	proprietary	9.6 kb, other	Yes
Logiplex	Logiplex System	TCP/IP, proprietary	4.8 kb, 9.6 kb, 10 mb	Yes
MARTEK	Graphic Link	proprietary	4.8 kb, 9.6 kb, 19.2 kb, other	Yes
MDI	SAFENet	other (concurrent DOS)	4.8 kb, 9.6 kb, 19.2 kb, 56 kb, other	Yes

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	proprietary, other	4.8 kb, 9.6 kb, 19.2 kb, 56 kb	Yes
Northern Computers	PC-PAC	NetBIOS	10 mb	Unanswered
PCSC	Linc Net	other (PCSC proprietary)	other	Yes
SAIC	SAISMS	proprietary	9.6 kb, 10 mb	Yes
Sensormatic	AC500	other (RS232, RS422 dial up)	9.6 kb	No (150 plus)
SMF	ACS51	proprietary	4.8 kb, 9.6 kb, 19.2 kb, 56 kb	Yes
Software House	C-CURESystem 1 Plus	unanswered	9.6 kb	Yes
Stellar	MCM-1000	proprietary	4.8 kb	Yes
Sygnatron	Sygneplex	proprietary	19.2 kb	Yes
Synergistics	WA-PAC	proprietary	other	Yes
Tate	TIS4000	TCP/IP	4.8 kb, 9.6 kb, 19.2 kb, 56 kb, 10 mb	Yes
Vikonics	VISIDS 3500	proprietary	9.6 kb, other	Yes
Vindicator	ECS-5000	proprietary	9.6 kb	Yes
Westinghouse	SE5850	proprietary	4.8 kb, 9.6 kb	Yes
Westinghouse	SE6000	proprietary	4.8 kb, 9.6 kb, 10 mb	Yes
Westinghouse	Alto 818SX	proprietary	9.6 kb	Yes
Westinghouse	SE422	proprietary	9.6 kb	Yes

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

II.B.2(3) - From the following range, please select the number which most closely approximates the maximum message packets your system handles each second?

II.B.2(3)a - Is the above based on theoretical or actually measured data?

Firm Short Name	System Name	II.B.2(3)	II.A.2(3)a
Assessment	System 9000	1,000,000	Theoretical
Asset Contrl	ACS-100	100	Theoretical
CECO	Auto-Guard	1,000	Measured
CSI	I/NET	100,000	Measured
DAQ	Starwatch	>10,000,000	Theoretical
DSX	DSX-1030	1,000	Theoretical
Edicon	Envoy 7000	100	Measured
ENSEC	ES2000 <i>Plus</i>	unanswered	unanswered
Epic Data	SMS	1,000	Theoretical
Hirsch	Digitrack Models	10	Measured
Logiplex	Logiplex System	10	Measured
MARTEK	Graphic Link	10	Measured
MDI	SAFENet	100	Measured

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	unanswered	unanswered
Northern Computers	PC-PAC	10,000,000	Theoretical
PCSC	Linc Net	100	Measured
SAIC	SAISMS	1,000	Theoretical
Sensormatic	AC500	unanswered	Theoretical
SMF	ACS51	10	Measured
Software House	C-CURESystem 1 Plus	1,000	Measured
Stellar	MCM-1000	10	Theoretical
Sygnatron	Sygneplex	100,000	Theoretical
Synergistics	WA-PAC	100	Theoretical
Tate	TIS4000	unanswered	unanswered
Vikonics	VISIDS 3500	1,000	Theoretical
Vindicator	ECS-5000	100	Measured
Westinghouse	SE5850	100	Measured
Westinghouse	SE6000	100 serial, 1,000,000 ethernet	Theoretical
Westinghouse	Alto 818SX	100	Measured
Westinghouse	SE422	100	Measured

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

4.4 DATABASE AND REPORTING DATA

III.A - Does your system possess some form of activity audit trail, records, logs, or other similar storage and reporting capability?

III.A(1) - Which architecture is supported by your security system?

Firm Short Name	System Name	III.A	III.A(1)
Assessment	System 9000	Yes	Hierarchical
Asset Contrl	ACS-100	Yes	None
CECO	Auto-Guard	Yes	Hierarchical
CSI	I/NET	Yes	Hierarchical/ Relational
DAQ	Starwatch	Yes	Hierarchical
DSX	DSX-1030	Yes	Relational
Edicon	Envoy 7000	Yes	Relational
ENSEC	ES2000 <i>Plus</i>	Yes	Hierarchical/ Network
Epic Data	SMS	Yes	Relational
Hirsch	Digitrack Models	Yes	Relational
Logiplex	Logiplex System	Yes	Relational
MARTEK	Graphic Link	Yes	None
MDI	SAFENet	Yes	Relational

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	Yes	Relational
Northern Computers	PC-PAC	Yes	Relational
PCSC	Linc Net	Yes	Relational
SAIC	SAISMS	Yes	Hierarchical
Sensormatic	AC500	Yes	Relational
SMF	ACS51	Yes	Hierarchical
Software House	C-CURESystem 1 Plus	Yes	Hierarchical
Stellar	MCM-1000	Yes	Relational
Sygnatron	Sygneplex	Yes	None
Synergistics	WA-PAC	Yes	Relational/ Network (Plex)
Tate	TIS4000	Yes	Relational
Vikonics	VISIDS 3500	Yes	Hierarchical
Vindicator	ECS-5000	Yes	Relational
Westinghouse	SE5850	Yes	Hierarchical
Westinghouse	SE6000	Yes	Relational
Westinghouse	Alto 818SX	Yes	Hierarchical
Westinghouse	SE422	Yes	Hierarchical

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

III.A.1.a(1) - What is the maximum number of records that is supported by your security system?

III.A.1.a(2) - What is the maximum number of fields available per record?

III.A.1.a(3) - Does your system support the capability to accomplish ad hoc queries (e.g., via SQL)?

Firm Short Name	System Name	III.A.1.a(1)	III.A.1.a(2)	III.A.1.a(3)
Assessment	System 9000	unknown	7	Yes
CECO	Auto-Guard	unknown	unknown	Yes
CSI	I/NET	6,000,000	16	No
DAQ	Starwatch	65,528	8	Yes
ENSEC	ES2000 <i>Plus</i>	unanswered	unlimited	Yes
SAIC	SAISMS	50,000	128	Yes
SMF	ACS51	unknown	250	No
Software House	C-CURESystem 1 Plus	65,000	82	Yes
Vikonics	VISIDS 3500	200,000	12	Yes
Westinghouse	SE5850	10,000,000	256	Yes
Westinghouse	Alto 818SX	4000	6	No
Westinghouse	SE422	3000	6	No

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

III.A.1.a(4) - Given a 10,000 record database, how many seconds (or, fractions of a second) are required to extract a single line of data, assuming that all records must be touched?

Firm Short Name	System Name	III.A.1.a(4)
Assessment	System 9000	unknown
CECO	Auto-Guard	2
CSI	I/NET	unknown
DAQ	Starwatch	unknown
ENSEC	ES2000 <i>Plus</i>	unanswered
SAIC	SAISMS	unknown
SMF	ACS51	unknown
Software House	C-CURESystem 1 Plus	65
Vikonics	VISIDS 3500	unknown
Westinghouse	SE5850	10+
Westinghouse	Alto 818SX	unknown
Westinghouse	SE422	unknown

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

III.A.1.b(1) - What is the maximum number of records that is supported by your security system?

III.A.1.b(2) - What is the maximum number of fields available per record?

III.A.1.b(3) - What is the maximum number of network pointers per record?

FirmShort Name	System Name	III.A.1.b(1)	III.A.1.b(2)	III.A.1.b(3)
ENSEC	ES2000 Plus	unanswered	unanswered	unanswered
Synergistics	WA-PAC	1,000,000	1,000	100

III.A.1.b(4) - Does your system support the capability to accomplish ad hoc queries (e.g., via SQL)?

III.A.1.b(5) - Given a 10,000 record database, how many seconds (or, fractions of a second) are required to extract a single line of data, assuming that all records must be touched?

FirmShort Name	System Name	III.A.1.b(4)	III.A.1.b(5)
ENSEC	ES2000 Plus	Yes	unanswered
Synergistics	WA-PAC	Yes	unknown

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

III.A.1.c(1) - What is the maximum number of tables (relations if relational) that is supported by your system?

III.A.1.c(2) - What is the maximum number of variables (attributes if relational) per table (relation) that is supported by your system?

III.A.1.c(3) - What is the maximum number of records/rows (tuples if relational) per table that is supported by your system?

Firm Short Name	System Name	III.A.1.c(1)	III.A.1.c(2)	III.A.1.c(3)
CSI	I/NET	unknown	unknown	unknown
DSX	DSX-1030	unknown	unknown	unknown
Edicon	Envoy 7000	10,000+	255	unknown
Epic Data	SMS	unlimited	254	unlimited
Hirsch	Digitrack Models	unknown	unknown	unknown
Logiplex	Logiplex System	unknown	unknown	unknown
MDI	SAFENet	10	10	65,000
Mosler	LINX	unknown	unknown	unknown
Northern Computers	PC-PAC	unknown	unknown	unknown
PCSC	Linc Net	256	unknown	unanswered
Sensormatic	AC500	3	unknown	2 billion
Stellar	MCM-1000	64,000	64,000	64,000
Synergistics	WA-PAC	unknown	unknown	unknown
Tate	TIS4000	unknown	unknown	unknown
Vindicator	ECS-5000	32,768	255	maximum table size 128mb
Westinghouse	SE6000	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

- III.A.1.c(4) - Does your system support the capability to accomplish ad hoc queries by use of a single query for multiple tables with logical qualifications?
- III.A.1.c(5) - What is the maximum number of tables that can be simultaneously queried by a single query (i.e., "joined")?
- III.A.1.c(6) - Given a quiescent system (nothing else is happening) and two 10,000 row tables. How many seconds (or, what fractional part of a second) does it take to accomplish a simple query which extracts a single line of data (i.e., creates one record in response) from the two tables?

Firm Short Name	System Name	III.A.1.c(4)	III.A.1.c(5)	III.A.1.c(6)
CSI	I/NET	No	unknown	unknown
DSX	DSX-1030	Yes	unknown	unknown
Edicon	Envoy 7000	Yes	unknown	0.01
Epic Data	SMS	Yes	7	14 ms
Hirsch	Digitrack Models	Yes	unknown	unknown
Logiplex	Logiplex System	Yes	unknown	unknown
MDI	SAFENet	No	unknown	unknown
Mosler	LINX	Yes	unknown	unknown
Northern Computers	PC-PAC	No	unknown	unknown
PCSC	Linc Net	Yes	unknown	unknown

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Sensormatic	AC500	Yes	3	unknown
Stellar	MCM-1000	Yes	8	1
Synergistics	WA-PAC	No	unknown	unknown
Tate	TIS4000	Yes	unknown	unknown
Vindicator	ECS-5000	Yes	16	unknown
Westinghouse	SE6000	Yes	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

III.A.2.(1) - Does your system possess the capability to generate reports?

III.A.2.(2) - Which of the indicated forms of report generation are supported by your system?

Firm Short Name	System Name	III.A.2(1)	III.A.2(2)
Assessment	System 9000	CRT/display, file, paper	preprogrammed
Asset Contrl	ACS-100	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
CECO	Auto-Guard	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
CSI	I/NET	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
DAQ	Starwatch	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
DSX	DSX-1030	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Edicon	Envoy 7000	CRT/display, file, paper, other	preformatted, ad hoc
ENSEC	ES2000 <i>Plus</i>	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Epic Data	SMS	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Hirsch	Digitrack Models	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Logiplex	Logiplex System	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
MARTEK	Graphic Link	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
MDI	SAFENet	CRT/display, file, paper, other	preprogrammed, other (user defined by user menu selection)

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	CRT/display, file, paper	unanswered
Northern Computers	PC-PAC	CRT/display, file, paper	ad hoc
PCSC	Linc Net	CRT/display, paper	preprogrammed, preformatted, other
SAIC	SAISMS	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Sensormatic	AC500	CRT/display, paper	preprogrammed, preformatted, ad hoc
SMF	ACS51	CRT/display, file, paper, other	preprogrammed, preformatted, ad hoc
Software House	C-CURESystem 1 Plus	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Stellar	MCM-1000	CRT/display, paper	preprogrammed, preformatted
Sygnatron	Sygneplex	CRT/display, file, paper	preprogrammed
Synergistics	WA-PAC	CRT/display, file, paper	ad hoc
Tate	TIS4000	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Vikonics	VISIDS 3500	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Vindicator	ECS-5000	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Westinghouse	SE5850	CRT/display, file, paper	preprogrammed, preformatted, ad hoc
Westinghouse	SE6000	CRT/display, paper	preprogrammed, preformatted, ad hoc
Westinghouse	Alto 818SX	CRT/display, paper	preprogrammed, preformatted
Westinghouse	SE422	CRT/display, paper	preprogrammed, preformatted

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

4.5 SYSTEM RELIABILITY DATA

IV(1) - Does your system possess some level of planned high reliability for hardware and software?

IV.A(1) - Does your system reside on an underlying hardware/software platform which is fully fault tolerant?

IV.A(2) - Was your security applications software engineered for fault tolerant operation on its platform?

Firm Short Name	System Name	IV(1)	IV.A(1)	IV.A(2)
Assessment	System 9000	Yes	No	Yes
Asset Contrl	ACS-100	Yes	No	unanswered
CECO	Auto-Guard	Yes	No	Yes
CSI	I/NET	Yes	Yes	Yes
DAQ	Starwatch	Yes	Yes	Yes
DSX	DSX-1030	Yes	No	No
Edicon	Envoy 7000	Yes	No	No
ENSEC	ES2000 <i>Plus</i>	Yes	Yes	Yes
Epic Data	SMS	Yes	Yes	No
Hirsch	Digitrack Models	No	No	No
Logiplex	Logiplex System	Yes	Yes	Yes
MARTEK	Graphic Link	Yes	No	No
MDI	SAFENet	Yes	Yes	Yes

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	Yes	No	unanswered
Northern Computers	PC-PAC	Yes	No	No
PCSC	Linc Net	Yes	No	unanswered
SAIC	SAISMS	Yes	Yes	Yes
Sensormatic	AC500	No	unanswered	unanswered
SMF	ACS51	Yes	Yes	Yes
Software House	C-CURESystem 1 Plus	Yes	No	unanswered
Stellar	MCM-1000	Yes	Yes	Yes
Sygnatron	Sygneplex	Yes	Yes	Yes
Synergistics	WA-PAC	No	No	No
Tate	TIS4000	Yes	Yes	Yes
Vikonics	VISIDS 3500	Yes	No	unanswered
Vindicator	ECS-5000	Yes	Yes	Yes
Westinghouse	SE5850	unanswered	No	No
Westinghouse	SE6000	Yes	No	Yes
Westinghouse	Alto 818SX	Yes	No	No
Westinghouse	SE422	Yes	No	No

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

IV.B(1) - Does your system possess the capability to operate on a multiprocessor hardware platform (one with more than a single CPU colocated in the same physical enclosure)?

IV.B(1)a - Can your system operate if it loses one of the CPU's?

IV.B(2) - Does your system possess the capability to operate with multiple memory boards (same enclosure)?

Firm Short Name	System Name	IV.B(1)	IV.B(1)a	IV.B(2)
Assessment	System 9000	asynchronous	Yes-CPU removed	Yes
Asset Contrl	ACS-100	No	unanswered	No
CECO	Auto-Guard	asynchronous	Yes-CPU removed	Yes
CSI	I/NET	symmetric, synchronous	Yes-CPU in place, Yes-CPU removed	Yes
DAQ	Starwatch	symmetric	Yes-CPU in place	Yes
DSX	DSX-1030	symmetric	Yes-CPU in place	Yes
Edicon	Envoy 7000	No	unanswered	Yes
ENSEC	ES2000 <i>Plus</i>	No	No	No
Epic Data	SMS	symmetric, asynchronous	Yes-CPU in place, Yes-CPU removed	Yes
Hirsch	Digitrack Models	unanswered	unanswered	unanswered
Logiplex	Logiplex System	symmetric	other	other
MARTEK	Graphic Link	No	unanswered	Yes
MDI	SAFENet	No	Yes-CPU in place	No

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	asynchronous	Yes-CPU in place	Yes
Northern Computers	PC-PAC	unanswered	unanswered	unanswered
PCSC	Linc Net	No	unanswered	Yes
SAIC	SA'SMS	symmetric, asynchronous	Yes-CPU in place	Yes
Sensormatic	AC500	unanswered	unanswered	unanswered
SMF	ACS51	synchronous	Yes-CPU in place	Yes
Software House	C-CURESystem 1 Plus	No	No	No
Stellar	MCM-1000	No	unanswered	Yes
Sygnatron	Sygneplex	symmetric	Yes-CPU removed, Yes-CPU in place	No
Synergistics	WA-PAC	No	Yes-CPU in place	Yes
Tate	TIS4000	synchronous, asynchronous	Yes-CPU in place, Yes-CPU removed	No
Vikonics	VISIDS 3500	No	Yes-CPU in place, Yes-CPU removed	No
Vindicator	ECS-5000	symmetric	Yes-CPU in place, Yes-CPU removed	Yes
Westinghouse	SE5850	unanswered	unanswered	unanswered
Westinghouse	SE6000	unanswered	Yes-CPU in place	Yes
Westinghouse	Alto 818SX	No	No	No
Westinghouse	SE422	No	No	No

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

IV.B(2)a - Can your system operate if it loses one of the memory boards?

IV.B(3) - Does your system possess the capability to operate with mirrored rigid disks?

IV.B(4) - Does your system support multiple network cards?

Firm Short Name	System Name	IV.B(2)a	IV.B(3)	IV.B(4)
Assessment	System 9000	Yes-board in place	No	No
Asset Contrl	ACS-100	No	Yes	No
CECO	Auto-Guard	Yes-board removed	Yes	Yes-same protocol
CSI	I/NET	Yes-board in place, Yes-board removed	Yes	Yes-same protocol
DAQ	Starwatch	Yes-board in place	Yes	Yes-same protocol
DSX	DSX-1030	Yes-board in place	Yes	Yes-same protocol
Edicon	Envoy 7000	No	Yes	No
ENSEC	ES2000 <i>Plus</i>	No	Yes	Yes-same protocol
Epic Data	SMS	Yes- board in place, Yes-board removed	Yes	Yes-same protocol, Yes-different protocol
Hirsch	Digitrack Models	unanswered	unanswered	unanswered
Logiplex	Logiplex System	other	Yes	Yes-same protocol, Yes-different protocol
MARTEK	Graphic Link	No	No	No
MDI	SAFENet	No	Yes	Yes-different protocol

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	No	Yes	Yes-same protocol
Northern Computers	PC-PAC	unanswered	unanswered	unanswered
PCSC	Linc Net	No	Yes	Yes-same protocol
SAIC	SAISMS	Yes-board in place, Yes-board removed	Yes	Yes-same protocol, Yes-different protocol
Sensormatic	AC500	unanswered	unanswered	unanswered
SMF	ACS51	Yes-board in place	Yes	Yes-different protocol
Software House	C-CURESystem 1 Plus	No	No	No
Stellar	MCM-1000	Yes-board in place	No	No
Sygnatron	Sygneplex	No	Yes	Yes-same protocol
Synergistics	WA-PAC	Yes-board removed	No	No
Tate	TIS4000	Yes-board in place, board removed	Yes	Yes-same protocol
Vikonics	VISIDS 3500	Yes-board in place	Yes	Yes-same protocol
Vindicator	ECS-5000	No	Yes	Yes-same protocol
Westinghouse	SE5850	unanswered	No	unanswered
Westinghouse	SE6000	Yes-board in place	Yes	Yes-different protocol
Westinghouse	Alto 818SX	No	No	No
Westinghouse	SE422	No	No	No

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

IV.B(5) - Was your system engineered to provide enhanced power supply reliability?

IV.C(1) - Given what you feel to be a typical installation, what is the expected Mean-Time-Between-Failures (MTBF) in hours once the system has been installed, is stabilized and under maintenance?

IV.C(2) - For this MTBF, what do you expect for a standard deviation?

Firm Short Name	System Name	IV.B(5)	IV.C(1)	IV.C(2)
Assessment	System 9000	Yes-built in UPS	unknown	unknown
Asset Contrl	ACS-100	Yes-built in UPS	10,000	unknown
CECO	Auto-Guard	Yes-built in UPS	unknown	unknown
CSI	I/NET	other (PC-based external UPS networked)	10,000	500
DAQ	Starwatch	Yes-built-in UPS	13,416.6	unanswered
DSX	DSX-1030	Yes-multiple internal power supplies	unknown	unknown
Edicon	Envoy 7000	Yes-built-in UPS	unknown	unknown
ENSEC	ES2000 <i>Plus</i>	Yes-built-in UPS	unknown	unknown
Epic Data	SMS	Yes-built-in UPS	unanswered	unanswered
Hirsch	Digitrack Models	unanswered	unknown	unknown
Logiplex	Logiplex System	Yes-multiple internal power supplies	50,000	unknown
MARTEK	Graphic Link	other (we do not supply hardware)	unknown	unknown
MDI	SAFENet	No	unknown	unknown

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	Yes-built-in UPS	30,000	unknown
Northern Computers	PC-PAC	unanswered	unanswered	unanswered
PCSC	Linc Net	No	26,208	10%
SAIC	SAISMS	Yes-multiple internal power supplies, Yes-built-in UPS	unknown	unknown
Sensormatic	AC500	unanswered	unanswered	unanswered
SMF	ACS51	other (external UPS)	unknown	unknown
Software House	C-CURESystem 1 Plus	other (external UPS)	6.2 years	unknown
Stellar	MCM-1000	other (external UPS)	unknown	unknown
Sygnatron	Sygneplex	Yes-multiple internal power supplies	unknown	unknown
Synergistics	WA-PAC	other (external UPS)	unknown	unknown
Tate	TIS4000	Yes-multiple internal power supplies, Yes-built-in UPS	2-4 years	unknown
Vikonics	VISIDS 3500	No	unknown	unknown
Vindicator	ECS-5000	other (external UPS)	20,000	97%
Westinghouse	SE5850	other (external UPS)	unanswered	unanswered
Westinghouse	SE6000	other (external UPS)	unanswered	unanswered
Westinghouse	Alto 818SX	other (battery back up)	unanswered	unanswered
Westinghouse	SE422	other (external UPS)	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

4.6 PRIORITIZATION, EVENT STATES AND EVENT HANDLING DATA

V.A(1) - Does your system support assignment of priorities to events (state changes)?

V.A(2) - Does your system support end-user assignment of priorities to events (state changes)?

V.B(1) - What is the maximum number of intrusion alarm states supported by your system?

Firm Short Name	System Name	V.A(1)	V.A(2)	V.B(1)
Assessment	System 9000	No	No	6
Asset Contrl	ACS-100	Yes	Yes	6
CECO	Auto-Guard	Yes	Yes	256
CSI	I/NET	Yes	Yes	255
DAQ	Starwatch	Yes	Yes	4
DSX	DSX-1030	Yes	Yes	9
Edicon	Envoy 7000	Yes	Yes	4
ENSEC	ES2000 <i>Plus</i>	Yes	Yes	5
Epic Data	SMS	Yes	Yes	16
Hirsch	Digitrack Models	Yes	Yes	8
Logiplex	Logiplex System	Yes	Yes	5
MARTEK	Graphic Link	Yes	Yes	255
MDI	SAFENet	Yes	No	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	Yes	Yes	500,000
Northern Computers	PC-PAC	Yes	Yes	4,096
PCSC	Linc Net	Yes	Yes	4
SAIC	SAISMS	Yes	Yes	4
Sensormatic	AC500	Yes	Yes	5
SMF	ACS51	Yes	Yes	4
Software House	C-CURESystem 1 Plus	Yes	Yes	4
Stellar	MCM-1000	Yes	Yes	15,000
Sygnatron	Sygnplex	Yes	Yes	4
Synergistics	WA-PAC	Yes	Yes	2
Tate	TIS4000	Yes	Yes	16
Vikonics	VISIDS 3500	Yes	Yes	13
Vindicator	ECS-5000	Yes	Yes	5
Westinghouse	SE5850	Yes	Yes	6
Westinghouse	SE6000	Yes	Yes	unanswered
Westinghouse	Alto 818SX	Yes	Yes	unanswered
Westinghouse	SE422	Yes	Yes	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

V.B(1)a - How many of these states may be uniquely identified on your display?

V.B(1)b - How many of these states may be uniquely identified in a log/database entry?

V.B(1)c - How many intrusion detection alarm states are automatically defined on your system?

Firm Short Name	System Name	V.B(1)a	V.B(1)b	V.B(1)c
Assessment	System 9000	6	6	6
Asset Contrl	ACS-100	6	6	6
CECO	Auto-Guard	256	256	50
CSI	I/NET	255	255	6
DAQ	Starwatch	4	4	4
DSX	DSX-1030	9	8	4
Edicon	Envoy 7000	4	4	4
ENSEC	ES2000 <i>Plus</i>	5	5	5
Epic Data	SMS	16	16	16
Hirsch	Digitrack Models	8	8	7
Logiplex	Logiplex System	5	5	5
MARTEK	Graphic Link	255	255	255
MDI	SAFENet	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	6	500,000	0
Northern Computers	PC-PAC	5	5	5
PCSC	Linc Net	4	4	4
SAIC	SAISMS	4	4	4
Sensormatic	AC500	5	5	0
SMF	ACS51	4	4	4
Software House	C-CURESystem 1 Plus	4	4	4
Stellar	MCM-1000	15,000	15,000	15,000
Sygnatron	Sygneplex	4	4	4
Synergistics	WA-PAC	2	2	2
Tate	TIS4000	16	16	None
Vikonics	VISIDS 3500	13	13	10
Vindicator	ECS-5000	5	5	5
Westinghouse	SE5850	6	6	12
Westinghouse	SE6000	unanswered	unanswered	unanswered
Westinghouse	Alto 818SX	unanswered	unanswered	unanswered
Westinghouse	SE422	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

V.B(2) - What is the maximum number of entry control system states supported by your system?

V.B(2)a - How many of these states may be uniquely identified on your display?

V.B(2)b - How many of these states may be uniquely identified in a log/database entry?

Firm Short Name	System Name	V.B(2)	V.B(2)a	V.B(2)b
Assessment	System 9000	2	2	2
Asset Contrl	ACS-100	9	9	2
CECO	Auto-Guard	unknown	unknown	unknown
CSI	I/NET	150	150	150
DAQ	Starwatch	20	20	20
DSX	DSX-1030	4	4	4
Edicon	Envoy 7000	52	52	52
ENSEC	ES2000 <i>Plus</i>	6	6	6
Epic Data	SMS	16	16	16
Hirsch	Digitrack Models	unanswered	unanswered	unanswered
Logiplex	Logiplex System	5	5	5
MARTEK	Graphic Link	255	255	255
MDI	SAFENet	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	32,000	6	500,000
Northern Computers	PC-PAC	6	6	6
PCSC	Linc Net	12	12	12
SAIC	SAISMS	4	4	4
Sensormatic	AC500	10+	10+	10+
SMF	ACS51	4	4	4
Software House	C-CURESystem 1 Plus	5	5	6
Stellar	MCM-1000	unknown	unknown	unknown
Sygnatron	Sygneplex	2	2	2
Synergistics	WA-PAC	3	3	3
Tate	TIS4000	16	16	16
Vikonics	VISIDS 3500	20	20	20
Vindicator	ECS-5000	21	20	20
Westinghouse	SE5850	16	16	16
Westinghouse	SE6000	unanswered	unanswered	unanswered
Westinghouse	Alto 818SX	unanswered	unanswered	unanswered
Westinghouse	SE422	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

V.B(2)c - How many entry control states are automatically defined on your system?

V.C(1) - Are intrusion alarms overridden on access by use of hardware at the sensor or by use of software at a more remote processor location?

V.C(2) - Does the entry control subsystem provide for various categories of access, delimited as shown?

Firm Short Name	System Name	V.B(2)c	V.C(1)	V.C(2)
Assessment	System 9000	2	software	by location
Asset Contrl	ACS-100	9	software	by date/day, by time, by location
CECO	Auto-Guard	unknown	hardware	by date/day, by time, by location
CSI	I/NET	150	software	by date/day, by time, by location
DAQ	Starwatch	20	software	by date/day, by time, by location
DSX	DSX-1030	4	software	by date/day, by time, by location, other
Edicon	Envoy 7000	52	software, hardware	by date/day, by time, by location, other
ENSEC	ES2000 <i>Plus</i>	6	software	by date/day, by time, by location
Epic Data	SMS	16	hardware, software	by date/day, by time, by location, other
Hirsch	Digitrack Models	unanswered	software, hardware	by date/day, by time, by location, other
Logiplex	Logiplex System	5	software	by date/day, by time, by location, other
MARTEK	Graphic Link	255	software, hardware	by date/day, by time, by location, other
MDI	SAFENet	unanswered	software	by date/day, by time, by location, other

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	0	software	by date/day, by time, by location
Northern Computers	PC-PAC	6	hardware	by date/day, by time, by location, other
PCSC	Line Net	12	hardware, software	by date/day, by time, by location, other
SAIC	SAISMS	4	software	by date/day, by time, by location
Scansormatic	AC500	10+	software	by date/day, by time, by location
SMF	ACS51	4	software	by date/day, by time, by location, other
Software House	C-CURESystem 1 Plus	5	software	by date/day, by time, by location
Stellar	MCM-1000	unknown	software	None
Sygnatron	Sygneplex	2	software	by date/day, by time, by location, other
Synergistics	WA-PAC	3	hardware	by date/day, by time, by location
Tate	TIS4000	None	software	by date/day, by time, by locaiton
Vikonics	VISIDS 3500	17	hardware, software	by date/day, bytime, by location, other
Vindicator	ECS-5000	21	software	by date/day, by time, by location, other
Westinghouse	SE5850	unanswered	software	by date/day, by time, by location
Westinghouse	SE6000	unanswered	software	by date/day, by time, by location. other
Westinghouse	Alto 818SX	unanswered	software	by date/day, by time, by location
Westinghouse	SE422	unanswered	software	by date/day, by time, by location

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

V.C(3) - What is the highest resolution for date/time supported by your security system?

V.C(4) - Will the entry control subsystem support a door unlocked alarm under circumstances when the door does not close and/or lock within some specified period of time?

V.C(5) - What number of access attempts is the requester allowed by your system?

Firm Short Name	System Name	V.C(3)	V.C(4)a	V.C(5)
Assessment	System 9000	seconds	Yes-variable	not supported
Asset Contrl	ACS-100	1 minute	Yes-variable	variable between: 1 and 10
CECO	Auto-Guard	1 minute	Yes-variable	variable between: 0 and 99
CSI	I/NET	1 minute	Yes-variable	not supported
DAQ	Starwatch	0.1 seconds	Yes-variable	variable between: 1 and 9
DSX	DSX-1030	minutes	Yes-variable	variable between: 0 and 9
Edicon	Envoy 7000	seconds	Yes-fixed time, Yes-variable	variable between: 1 and 255
ENSEC	ES2000 <i>Plus</i>	1 second	Yes-variable	variable between: 1 and 10
Epic Data	SMS	1 second	Yes-variable	not supported
Hirsch	Digitrack Models	minute	Yes-variable, Yes-fixed time	other
Logiplex	Logiplex System	seconds	Yes-variable	variable between: 1 and 9
MARTEK	Graphic Link	1 second	Yes-fixed time, Yes-variable, other	variable between: 1 and 32,766
MDI	SAFENet	seconds	Yes- fixed time, variable (user defined)	other (3-via key-board, unlimited card access)

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	seconds	Yes-fixed time, Yes-variable	unknown
Northern Computers	PC-PAC	minute	Yes-variable	unknown
PCSC	Linc Net	seconds	Yes-variable	variable between: 1 and 65,535
SAIC	SAISMS	1 second	Yes-variable	fixed at: 1
Sensormatic	AC500	hours/minutes	Yes-fixed time, Yes-variable	unknown
SMF	ACS51	1 second	Yes-variable	variable between: 1 and 10
Software House	C-CURESystem 1 Plus	seconds	Yes-variable	other (user defined)
Stellar	MCM-1000	seconds	No	unknown
Sygnatron	Sygneplex	sec.	Yes-variable	fixed at: 3
Synergistics	WA-PAC	1 second	Yes-fixed time	fixed at: 1
Tate	TIS4000	seconds	Yes-fixed time, Yes-variable	variable between: 1 and 5
Vikonics	VISIDS 3500	seconds	Yes-variable	variable between: 1 and 3
Vindicator	ECS-5000	seconds	Yes-variable	variable between: 1 and 15
Westinghouse	SE5850	minutes	Yes-variable	fixed at: 3, other (valid card and/or keypad)
Westinghouse	SE6000	minutes	Yes-variable	other (valid card and/or keypad presentation)
Westinghouse	Alto 818SX	minutes	Yes-variable	fixed at: 3 (other : valid card and/or keypad presentation)
Westinghouse	SE422	minutes	Yes-variable	fixed at: 3 (other : valid card and/or keypad presentation)

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

V.C(6) - Does the system support duress codes?

Firm Short Name	System Name	V.C(6)
Assessment	System 9000	Yes
Asset Contrl	ACS-100	Yes
CECO	Auto-Guard	Yes
CSI	I/NET	Yes
DAQ	Starwatch	Yes
DSX	DSX-1030	No
Edicon	Envoy 7000	Yes
ENSEC	ES2000 <i>Plus</i>	Yes
Epic Data	SMS	Yes
Hirsch	Digitrack Models	Yes
Logiplex	Logiplex System	Yes
MARTEK	Graphic Link	Yes
MDI	SAFENet	Yes

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	Yes
Northern Computers	PC-PAC	Yes
PCSC	Linc Net	Yes
SAIC	SAISMS	Yes
Sensormatic	AC500	Yes
SMF	ACS51	Yes
Software House	C-CURESystem 1 Plus	Yes
Stellar	MCM-1000	Yes
Sygnatron	Sygneplex	Yes
Synergistics	WA-PAC	Yes
Tate	TIS4000	Yes
Vikonics	VISIDS 3500	Yes
Vindicator	ECS-5000	Yes
Westinghouse	SE5850	Yes
Westinghouse	SE6000	Yes
Westinghouse	Alto 818SX	Yes
Westinghouse	SE422	Yes

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

4.7 USER INTERFACE DATA

VI.A(1) - Does your security system support input via: keyboard, mouse, track ball, light pen, touch screen, voice, or other?

VI.A(2) - Does your security system implement a two-person rule for the following operator actions?--Sensor State Changes (e.g., access), Database Modification, Control change, Other, None.

VI.B.1(1) - What is the highest resolution supported by your security system, expressed in number of pixels by number of pixels (e.g., 800x600)?

Firm Short Name	System Name	VI.A(1)	VI.A(2)	VI.B.1(1)
Assessment	System 9000	keyboard, mouse	none	800x600
Asset Contrl	ACS-100	keyboard	none	800x400
CECO	Auto-Guard	keyboard, mouse, light pen	sensor state, control change	unanswered
CSI	I/NET	keyboard, mouse, track ball	none	1024x768
DAQ	Starwatch	keyboard, mouse, track ball, touch screen	sensor state changes, database modification, control change	720x348
DSX	DSX-1030	keyboard, mouse, track ball, touch screen	none	800x600
Edicon	Envoy 7000	keyboard, mouse	sensor state changes	640x480
ENSEC	ES2000 <i>Plus</i>	keyboard, mouse, track ball	sensor state changes	800x600
Epic Data	SMS	keyboard, mouse, track ball	sensor state changes, database modification, control change	1024x768
Hirsch	Digitrack Mdls	keyboard, mouse	sensor state changes	unanswered
Logiplex	Logiplex System	keyboard, mouse, track ball, light pen, touch screen	sensor state changes, database modification, control change	1280x1024
MARTEK	Graphic Link	keyboard, mouse, track ball, light pen, touch screen, other	sensor state changes, database modification, control change	1024x768
MDI	SAFENet	keyboard	other (physical entry to secured area)	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	keyboard, mouse, track ball	sensor state changes, control change	800x600
Northern Computers	PC-PAC	keyboard	none	unanswered
PCSC	Linc Net	keyboard, mouse	none	1024x768
SAIC	SAISMS	keyboard, mouse, touch screen	sensor state changes, database modification, control change	1024x1024
Sensormatic	AC500	keyboard	none	1024x768
SMF	ACS51	keyboard, mouse, track ball, light pen, touch screen, voice	sensor state changes, control change	1024x768
Software House	C-CURESystem 1 Plus	keyboard, mouse, track ball	sensor state chnges, database mod., control change, other	1024x768
Stellar	MCM-1000	keyboard, other	sensor state changes, control change	640x350
Sygnatron	Sygneplex	keyboard, touch screen	database modification, control change	1024x768
Synergistics	WA-PAC	keyboard	none	640x480
Tate	TIS4000	keyboard, mouse	none	1280x1040
Vikonics	VISIDS 3500	keyboard, mouse, touch screen	sensor state changes, database modification, control change	640x480
Vindicator	ECS-5000	keyboard, mouse, track ball	sensor state changes, database modification	1024x768
Westinghouse	SE5850	keyboard	unanswered	800x600
Westinghouse	SE6000	keyboard, mouse	none	1280x1024
Westinghouse	Alto 818SX	keyboard	none	unanswered
Westinghouse	SE422	keyboard	none	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.B.1(2) - Which (if any) audio outputs are provided with and routinely supported by your security system?

VI.B.2(1) - Does your system support presentation of data via some combination of: maps/drawings, icons, character data, other, none of these?

VI.B.3(1) - Indicate whether your system allows interface and/or display icon capabilities with a Coded Card Reader.

Firm Short Name	System Name	VI.B.1(2)	VI.B.2(1)	VI.B.3(1)
Assessment	System 9000	internal speaker, sound board	maps/drawings	interface
Asset Contrl	ACS-100	none of these	maps/drawings, character data	interface
CECO	Auto-Guard	internal speaker, sound board	icons, character data	interface
CSI	I/NET	internal speaker, separate horn	maps/drawings, icons, character data	interface, display icon
DAQ	Starwatch	internal speaker, sound board, separate horn	maps/drawings, icons, character data, other	interface, display icon
DSX	DSX-1030	internal speaker, separate horn	maps/drawings, icons, character data	interface
Edicon	Envoy 7000	internal speaker, separate horn	maps/drawings, icons, character data	interface, display icon
ENSEC	ES2000 <i>Plus</i>	internal speaker, separate horn	maps/drawings, icons, character data	interface, display icon
Epic Data	SMS	internal speaker, sound board, separate horn	maps/drawings, icons, character data	interface, display icon
Hirsch	Digitrack Models	internal speaker, sound board	maps/drawings, icons, character data	interface
Logiplex	Logiplex System	separate horn	maps/drawings, icons, character data	interface, display icon
MARTEK	Graphic Link	internal speaker, sound board, separate horn other	maps/drawings, icons, character data, other	interface, display icon
MDI	SAFENet	internal speaker, sound board, separate horn, other	maps/drawings, icons, character data, other	interface

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	internal speaker	maps/drawings, character data	interface
Northern Computers	PC-PAC	none of these	unanswered	interface
PCSC	Linc Net	internal speaker	maps/drawings, character data	interface
SAIC	SAISMS	internal speaker, sound board	maps/drawings, character data	interface
Sensormatic	AC500	internal speaker	maps/drawings, icons, character data	interface
SMF	ACS51	internal speaker, separate horn	maps/drawings, icons, character data	interface, display icon
Software House	C-CURESystem 1 Plus	internal speaker	maps/drawings, icons, character data	interface, display icon
Stellar	MCM-1000	internal speaker	maps/drawings, icons, character data	not applicable
Sygnatron	Sygneplex	separate horn	maps/drawings, character data	interface
Synergistics	WA-PAC	internal speaker	maps/drawings, character data	interface
Tate	TIS4000	internal speaker, separate horn, other	maps/drawings, icons, character data, other	display icon
Vikonics	VISIDS 3500	internal speaker, separate horn	maps/drawings, icons, character data	interface, display icon
Vindicator	ECS-5000	internal speaker, sound board, separate horn	maps/drawings, icons, character data, other	interface, display icon
Westinghouse	SE5850	internal speaker, separate horn	maps/drawings, character data	interface
Westinghouse	SE6000	internal speaker, separate horn	maps/drawings, icons, character data	interface
Westinghouse	Alto 818SX	internal speaker	character data	not applicable
Westinghouse	SE422	internal speaker	character data	interface

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.B.3(2) - Indicate whether your system allows interface and/or display icon capabilities with a "Smart" Card (Key) Reader.

VI.B.3(3) - Indicate whether your system allows interface and/or display icon capabilities with a Proximity Card Reader.

VI.B.3(4) - Indicate whether your system allows interface and/or display icon capabilities with a Numeric Keypad.

Firm Short Name	System Name	VI.B.3(2)	VI.B.3(3)	VI.B.3(4)
Assessment	System 9000	interface	interface	interface
Asset Contrl	ACS-100	not applicable	interface	interface
CECO	Auto-Guard	interface	interface	interface
CSI	I/NET	not applicable	interface, display icon	interface, display icon
DAQ	Starwatch	interface, display icon	interface, display icon	interface, display icon
DSX	DSX-1030	interface	interface	interface
Edicon	Envoy 7000	not applicable	interface, display icon	interface, display icon
ENSEC	ES2000 <i>Plus</i>	not applicable	interface, display icon	interface, display icon
Epic Data	SMS	not applicable	interface, display icon	interface, display icon
Hirsch	Digitrack Models	not applicable	interface	interface
Logiplex	Logiplex System	not applicable	interface, display icon	interface, display icon
MARTEK	Graphic Link	interface, display icon	interface, display icon	interface, display icon
MDI	SAFENet	not applicable	interface	interface

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	interface	interface	interface
Northern Computers	PC-PAC	interface	interface	interface
PCSC	Linc Net	interface	interface	interface
SAIC	SAISMS	interface	interface	interface
Sensormatic	AC500	not applicable	not applicable	interface
SMF	ACS51	interface, display icon	interface, display icon	interface, display icon
Software House	C-CURESystem 1 Plus	interface, display icon	interface, display icon	interface, display icon
Stellar	MCM-1000	not applicable	not applicable	not applicable
Sygnatron	Sygneplex	not applicable	interface	interface
Synergistics	WA-PAC	interface	interface	interface
Tate	TIS4000	display icon	display icon	display icon
Vikonics	VISIDS 3500	interface, display icon	interface, display icon	interface, display icon
Vindicator	ECS-5000	interface, display icon	interface, display icon	interface, display icon
Westinghouse	SE5850	not applicable	interface	interface
Westinghouse	SE6000	not applicable	interface	interface
Westinghouse	Alto 818SX	not applicable	interface	interface
Westinghouse	SE422	not applicable	interface	interface

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.B.3(5) - Indicate whether your system allows interface and/or display icon capabilities with a Biometric Hand-Geometry Unit.

VI.B.3(6) - Indicate whether your system allows interface and/or display icon capabilities with a Biometric Retinal ID Unit.

VI.B.3(7) - Indicate whether your system allows interface and/or display icon capabilities with a Biometric Fingerprint ID Unit.

Firm Short Name	System Name	VI.B.3(5)	VI.B.3(6)	VI.B.3(7)
Assessment	System 9000	interface	interface	interface
Asset Contrl	ACS-100	interface	not applicable	interface
CECO	Auto-Guard	interface	interface	not applicable
CSI	I/NET	interface, display icon	not applicable	not applicable
DAQ	Starwatch	interface, display icon	interface, display icon	interface, display icon
DSX	DSX-1030	interface	interface	interface
Edicon	Envoy 7000	interface, display icon	have not tested	have not tested
ENSEC	ES2000 <i>Plus</i>	interface, display icon	interface, display icon	not applicable
Epic Data	SMS	not applicable	not applicable	not applicable
Hirsch	Digitrack Models	interface	interface	interface
Logiplex	Logiplex System	interface, display icon	interface, display icon	interface, display icon
MARTEK	Graphic Link	interface, display icon	interface, display icon	interface, display icon
MDI	SAFENet	interface	interface	interface

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	interface	interface	interface
Northern Computers	PC-PAC	interface	interface	interface
PCSC	Linc Net	interface	interface	interface
SAIC	SAISMS	interface	interface	interface
Sensormatic	AC500	not applicable	not applicable	not applicable
SMF	ACS51	interface, display icon	interface, display icon	interface, display icon
Software House	C-CURESystem 1 Plus	interface, display icon	interface, display icon	interface, display icon
Stellar	MCM-1000	not applicable	not applicable	not applicable
Sygnatron	Sygneplex	interface	interface	interface
Synergistics	WA-PAC	not applicable	not applicable	not applicable
Tate	TIS4000	not applicable	not applicable	not applicable
Vikonics	VISIDS 3500	interface, display icon	interface, display icon	interface, display icon
Vindicator	ECS-5000	not applicable	not applicable	not applicable
Westinghouse	SE5850	not applicable	not applicable	not applicable
Westinghouse	SE6000	interface	not applicable	not applicable
Westinghouse	Alto 818SX	not applicable	not applicable	not applicable
Westinghouse	SE422	not applicable	not applicable	not applicable

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.B.3(8) - Indicate whether your system allows interface and/or display icon capabilities with a Biometric Voice ID Unit.

VI.B.3(9) - Indicate whether your system allows interface and/or display icon capabilities with a Biometric Signature ID Unit.

VI.B.3(10) - Indicate whether your system allows interface and/or display icon capabilities with a Biometric Facial ID Unit.

Firm Short Name	System Name	VI.B.3(8)	VI.B.3(9)	VI.B.3(10)
Assessment	System 9000	interface	interface	interface
Asset Contrl	ACS-100	not applicable	not applicable	not applicable
CECO	Auto-Guard	not applicable	not applicable	not applicable
CSI	I/NET	not applicable	not applicable	not applicable
DAQ	Starwatch	interface, display icon	interface, display icon	interface, display icon
DSX	DSX-1030	interface	interface	interface
Edicon	Envoy 7000	have not tested	have not tested	have not tested
ENSEC	ES2000 <i>Plus</i>	not applicable	not applicable	interface, display icon
Epic Data	SMS	not applicable	not applicable	not applicable
Hirsch	Digitrack Models	not applicable	not applicable	not applicable
Logiplex	Logiplex System	interface, display icon	interface, display icon	interface, display icon
MARTEK	Graphic Link	interface, display icon	interface, display icon	interface, display icon
MDI	SAFENet	interface	interface	not applicable

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	not applicable	not applicable	not applicable
Northern Computers	PC-PAC	interface	interface	not applicable
PCSC	Linc Net	interface	interface	not applicable
SAIC	SAISMS	interface	interface	interface
Sensormatic	AC500	not applicable	not applicable	not applicable
SMF	ACS51	interface, display icon	interface, display icon	interface, display icon
Software House	C-CURESystem 1 Plus	interface, display icon	interface, display icon	not applicable
Stellar	MCM-1000	not applicable	not applicable	not applicable
Sygnatron	Sygnplex	not applicable	not applicable	not applicable
Synergistics	WA-PAC	not applicable	not applicable	not applicable
Tate	TIS4000	not applicable	not applicable	not applicable
Vikonics	VISIDS 3500	interface, display icon	interface, display icon	interface, display icon
Vindicator	ECS-5000	not applicable	not applicable	not applicable
Westinghouse	SE5850	not applicable	not applicable	not applicable
Westinghouse	SE6000	not applicable	not applicable	not applicable
Westinghouse	Alto 818SX	not applicable	not applicable	not applicable
Westinghouse	SE422	not applicable	not applicable	not applicable

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.B.3(11) - Indicate whether your system allows interface and/or display icon capabilities with a Biometric Other ID Unit.

VI.B.3(12) - Indicate whether your system allows interface and/or display icon capabilities with a Remote Lock Release.

VI.B.4(1) - Indicate whether your system allows interface and/or display icon capabilities with a Microwave Sensor.

Firm Short Name	System Name	VI.B.3(11)	VI.B.3(12)	VI.B.4(1)
Assessment	System 9000	interface	interface	interface
Asset Contrl	ACS-100	not applicable	interface	interface
CECO	Auto-Guard	not applicable	interface	interface
CSI	I/NET	not applicable	not applicable	interface
DAQ	Starwatch	interface, display icon	interface, display icon	interface, display icon
DSX	DSX-1030	not applicable	interface, display icon	interface, display icon
Edicon	Envoy 7000	not applicable	interface	interface, display icon
ENSEC	ES2000 <i>Plus</i>	not applicable	interface, display icon	interface, display icon
Epic Data	SMS	not applicable	interface	interface, display icon
Hirsch	Digitrack Models	not applicable	interface	interface
Logiplex	Logiplex System	display icon	interface, display icon	interface, display icon
MARTEK	Graphic Link	interface, display icon	interface, display icon	interface, display icon
MDI	SAFENet	not applicable	interface	interface

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	not applicable	interface	interface
Northern Computers	PC-PAC	not applicable	interface	interface
PCSC	Linc Net	not applicable	interface	interface
SAIC	SAISMS	interface	interface	interface
Sensormatic	AC500	not applicable	not applicable	interface
SMF	ACS51	interface, display icon	interface, display icon	interface, display icon
Software House	C-CURESystem 1 Plus	not applicable	interface, display icon	interface, display icon
Stellar	MCM-1000	not applicable	not applicable	interface
Sygnatron	Sygneplex	not applicable	interface	interface
Synergistics	WA-PAC	not applicable	interface	interface
Tate	TIS4000	not applicable	display icon	interface
Vikonics	VISIDS 3500	not applicable	interface, display icon	interface, display icon
Vindicator	ECS-5000	not applicable	interface, display icon	interface, display icon
Westinghouse	SE5850	not applicable	interface	interface
Westinghouse	SE6000	not applicable	interface	not applicable
Westinghouse	Alto 818SX	not applicable	interface	interface
Westinghouse	SE422	not applicable	interface	interface

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.B.4(2) - Indicate whether your system allows interface and/or display icon capabilities with a Passive InfraRed Sensor.

VI.B.4(3) - Indicate whether your system allows interface and/or display icon capabilities with a Magnetic Switch Sensor.

VI.B.4(4) - Indicate whether your system allows interface and/or display icon capabilities with a Glass Breakage Sensor.

Firm Short Name	System Name	VI.B.4(2)	VI.B.4(3)	VI.B.4(4)
Assessment	System 9000	interface	interface	interface
Asset Contrl	ACS-100	interface	interface	interface
CECO	Auto-Guard	interface	interface	interface
CSI	I/NET	interface	interface	interface
DAQ	Starwatch	interface, display icon	interface, display icon	interface, display icon
DSX	DSX-1030	interface, display icon	interface, display icon	interface, display icon
Edicon	Envoy 7000	interface, display icon	interface, display icon	interface, display icon
ENSEC	ES2000 <i>Plus</i>	interface, display icon	interface, display icon	interface, display icon
Epic Data	SMS	interface, display icon	interface, display icon	interface, display icon
Hirsch	Digitrack Models	interface	interface	interface
Logiplex	Logiplex System	interface, display icon	interface, display icon	interface, display icon
MARTEK	Graphic Link	interface, display icon	interface, display icon	interface, display icon
MDI	SAFENet	interface	interface	interface

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	interface	interface	interface
Northern Computers	PC-PAC	interface	interface	interface
PCSC	Linc Net	interface	interface	interface
SAIC	SAISMS	interface	interface	interface
Sensormatic	AC500	interface	interface	interface
SMF	ACS51	interface, display icon	interface, display icon	interface, display icon
Software House	C-CURESystem 1 Plus	interface, display icon	interface, display icon	interface, display icon
Stellar	MCM-1000	interface	interface	interface
Sygnatron	Sygnplex	interface	interface	interface
Synergistics	WA-PAC	interface	interface	interface
Tate	TIS4000	interface	interface	interface
Vikonics	VISIDS 3500	interface, display icon	interface, display icon	interface, display icon
Vindicator	ECS-5000	interface, display icon	interface, display icon	interface, display icon
Westinghouse	SE5850	interface	interface	interface
Westinghouse	SE6000	interface	interface	interface
Westinghouse	Alto 818SX	interface	interface	interface
Westinghouse	SE422	interface	interface	interface

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.B.4(5) - Indicate whether your system allows interface and/or display icon capabilities with an Inductance Sensor.

VI.B.4(6) - Indicate whether your system allows interface and/or display icon capabilities with Other Sensors.

VI.B.4(6)a - Specify the Other Sensors.

Firm Short Name	System Name	VI.B.4(5)	VI.B.4(6)	VI.B.4(6)a
Assessment	System 9000	interface	interface	not applicable
Asset Contrl	ACS-100	interface	not applicable	not applicable
CECO	Auto-Guard	interface	not applicable	not applicable
CSI	I/NET	interface	interface	any discreet or analog
DAQ	Starwatch	interface, display icon	not applicable	not applicable
DSX	DSX-1030	interface, display icon	interface, display icon	not applicable
Edicon	Envoy 7000	interface, display icon	interface, display icon	anything with contact (closure output)
ENSEC	ES2000 <i>Plus</i>	interface, display icon	interface	vibration
Epic Data	SMS	interface, display icon	not applicable	not applicable
Hirsch	Digitrack Models	interface	interface	any contact
Logiplex	Logiplex System	interface, display icon	interface, display icon	not applicable
MARTEK	Graphic Link	interface, display icon	interface, display icon	fiber optic, sound level, sound pattern, sound frequency, etc.
MDI	SAFENet	interface	interface	any dry contact

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	interface	not applicable	not applicable
Northern Computers	PC-PAC	interface	not applicable	not applicable
PCSC	Linc Net	interface	interface	infrasound
SAIC	SAISMS	interface	not applicable	not applicable
Sensormatic	AC500	interface	not applicable	not applicable
SMF	ACS51	interface, display icon	not applicable	not applicable
Software House	C-CURESystem 1 Plus	interface, display icon	not applicable	not applicable
Stellar	MCM-1000	interface	not applicable	not applicable
Sygnatron	Sygneplex	interface	interface	E-field
Synergistics	WA-PAC	interface	not applicable	not applicable
Tate	TIS4000	interface	interface	not applicable
Vikonics	VISIDS 3500	interface, display icon	interface, display icon	any dry contact device
Vindicator	ECS-5000	interface, display icon	interface, display icon	0-5v analog measurements
Westinghouse	SE5850	not applicable	not applicable	not applicable
Westinghouse	SE6000	not applicable	not applicable	not applicable
Westinghouse	Alto 818SX	not applicable	not applicable	not applicable
Westinghouse	SF422	not applicable	not applicable	not applicable

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.B.5(1) - Indicate whether your system allows interface and/or display icon capabilities with a Fixed CCTV Camera.

VI.B.5(2) - Indicate whether your system allows interface and/or display icon capabilities with a Pan-Tilt-Zoom CCTV Camera.

VI.B.5(3) - How many CCTV cameras (fixed or PTZ) can be controlled by your security system?

Firm Short Name	System Name	VI.B.5(1)	VI.B.5(2)	VI.B.5(3)
Assessment	System 9000	interface	interface	unknown
Asset Contrl	ACS-100	interface	interface	500
CECO	Auto-Guard	interface	interface	unknown
CSI	I/NET	interface	interface	unknown
DAQ	Starwatch	interface, display icon	interface, display icon	255
DSX	DSX-1030	interface	interface	unlimited
Edicon	Envoy 7000	interface	interface	256
ENSEC	ES2000 <i>Plus</i>	interface, display icon	interface, display icon	2,048
Epic Data	SMS	interface, display icon	interface, display icon	unknown
Hirsch	Digitrack Models	interface	interface	64
Logiplex	Logiplex System	not applicable	not applicable	999
MARTEK	Graphic Link	interface, display icon	interface, display icon	32,766
MDI	SAFENet	interface	not applicable	not applicable

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	interface	interface	32
Northern Computers	PC-PAC	interface	interface	100
PCSC	Linc Net	interface	interface	512
SAIC	SAISMS	interface	interface	512
Sensormatic	AC500	interface, display icon	interface, display icon	512
SMF	ACS51	interface, display icon	interface, display icon	512
Software House	C-CURESystem 1 Plus	interface	interface	unknown
Stellar	MCM-1000	interface	interface	unknown
Sygnatron	Sygneplex	interface	interface	99
Synergistics	WA-PAC	not applicable	not applicable	0
Tate	TIS4000	not applicable	not applicable	not applicable
Vikonics	VISIDS 3500	interface, display icon	interface, display icon	999
Vindicator	ECS-5000	interface	interface, display icon	64-512
Westinghouse	SE5850	interface	not applicable	not applicable
Westinghouse	SE6000	interface	interface	1,024
Westinghouse	Alto 818SX	interface	not applicable	not applicable
Westinghouse	SE422	interface	not applicable	not applicable

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.B.5(4) - Does your security system support direct control of a video recorder?

VI.B.5(5) - Does your security system support a video frame grab capability?

VI.B.5(6) - Does your security system support a video print capability?

Firm Short Name	System Name	VI.B.5(4)	VI.B.5(5)	VI.B.5(6)
Assessment	System 9000	record	No	No
Asset Contrl	ACS-100	record	No	No
CECO	Auto-Guard	record	No	No
CSI	I/NET	None	No	No
DAQ	Starwatch	record, fast forward, rewind, play	Yes	Yes
DSX	DSX-1030	None	No	No
Edicon	Envoy 7000	None	Yes	Yes
ENSEC	ES2000 <i>Plus</i>	record, fast forward, rewind, play	Yes	Yes
Epic Data	SMS	record, fast forward, rewind, play	No	No
Hirsch	Digitrack Models	None	No	No
Logiplex	Logiplex System	record, fast forward, rewind, play	Yes	Yes
MARTEK	Graphic Link	record, fast forward, rewind, play, other	Yes	Yes
MDI	SAFENet	None	Yes	Yes

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	None	No	No
Northern Computers	PC-PAC	record, fast forward, rewind, play	unanswered	unanswered
PCSC	Linc Net	record	No	No
SAIC	SAISMS	record, fast forward, rewind, play	Yes	Yes
Sensormatic	AC500	None	unanswered	unanswered
SMF	ACS51	record, fast forward, rewind, play	Yes	Yes
Software House	C-CURESystem 1 Plus	None	Yes	Yes
Stellar	MCM-1000	None	No	No
Sygnatron	Sygneplex	record, rewind, play	No	No
Synergistics	WA-PAC	record	No	No
Tate	TIS4000	not applicable	Yes	Yes
Vikonics	VISIDS 3500	record, fast forward, rewind, play	Yes	Yes
Vindicator	ECS-5000	record, fast forward, rewind, play	No	No
Westinghouse	SE5850	None	No	No
Westinghouse	SE6000	None	Yes	Yes
Westinghouse	Alto 818SX	None	No	No
Westinghouse	SE422	None	No	No

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VI.C(1) - Does your system support end-user modification of: maps/graphics, icons, states, preprogrammed response, other, none?

Firm Short Name	System Name	VI.C(1)
Assessment	System 9000	maps/graphics, preprogrammed response
Asset Contrl	ACS-100	maps/graphics, states, preprogrammed response
CECO	Auto-Guard	maps/graphics, states
CSI	I/NET	maps/graphics, icons, states, preprogrammed response
DAQ	Starwatch	maps/graphics, icons, states, preprogrammed response, other
DSX	DSX-1030	maps/graphics, states, preprogrammed response
Edicon	Envoy 7000	maps/graphics, icons, states, preprogrammed response, other
ENSEC	ES2000 <i>Plus</i>	maps/graphics, icons, states, preprogrammed response
Epic Data	SMS	maps/graphics, icons, states, preprogrammed response, other
Hirsch	Digitrack Models	maps/graphics, icons, preprogrammed response
Logiplex	Logiplex System	maps/graphics, icons, preprogrammed response
MARTEK	Graphic Link	maps/graphics, icons, states, preprogrammed response, other
MDI	SAFENet	maps/graphics, icons, states, preprogrammed response, other

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	maps/graphics, preprogrammed response
Northern Computers	PC-PAC	unanswered
PCSC	Linc Net	states, preprogrammed response
SAIC	SAISMS	maps/graphics, states, preprogrammed response
Sensormatic	AC500	maps/graphics, icons, states, preprogrammed response, other
SMF	ACS51	maps/graphics, icons, states, preprogrammed response
Software House	C-CURESystem 1 Plus	maps/graphics, states, other
Stellar	MCM-1000	maps/graphics, icons, preprogrammed response
Sygnatron	Sygneplex	maps/graphics, preprogrammed response
Synergistics	WA-PAC	maps/graphics
Tate	TIS4000	maps/graphics, icons, states, preprogrammed response
Vikonics	VISIDS 3500	maps/graphics, icons, states, preprogrammed response
Vindicator	ECS-5000	maps/graphics, states, preprogrammed response
Westinghouse	SE5850	maps/graphics, states, preprogrammed response
Westinghouse	SE6000	maps/graphics, states, preprogrammed response
Westinghouse	Alto 818SX	states, preprogrammed response
Westinghouse	SE422	states, preprogrammed response

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

4.8 SYSTEM PERFORMANCE AND CAPACITY DATA

Time from receipt of stimulus event on the internal network, to process an event and change the display on-screen indicator (e.g., icon) of an event from one state indicator to another, visually signaling the event to the operator:

VII(1)a - No Load System

VII(1)b - 5 Simultaneous Events

VII(1)c - 25 Simultaneous Events

Firm Short Name	System Name	VII(1)a	VII(1)b	VII(1)c
Assessment	System 9000	1	5	25
Asset Contrl	ACS-100	1	unknown	unknown
CECO	Auto-Guard	unanswered	unanswered	unanswered
CSI	I/NET	2	2	2
DAQ	Starwatch	1	1	1
DSX	DSX-1030	1	1	1
Edicon	Envoy 7000	1	~2	~7.2
ENSEC	ES2000 <i>Plus</i>	unknown	unknown	unknown
Epic Data	SMS	<1.0	<5.0	<5.0
Hirsch	Digitrack Models	<0.5	<1	<3
Logiplex	Logiplex System	0.4	1	5
MARTEK	Graphic Link	0.1	0.2	1
MDI	SAFENet	1	1	1-3

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	3	3	3
Northern Computers	PC-PAC	unknown	unknown	unknown
PCSC	Linc Net	0.2	0.5	<3
SAIC	SAISMS	unanswered	unanswered	0.8
Sensormatic	AC500	1	unknown	unknown
SMF	ACS51	unanswered	unanswered	1
Software House	C-CURESystem 1 Plus	<1	<1	<1
Stellar	MCM-1000	unknown	unanswered	unanswered
Sygnatron	Sygnplex	0.5	1	2
Synergistics	WA-PAC	1	unknown	unknown
Tate	TIS4000	0.1-0.5	0.1-0.5	0.1-0.5
Vikonics	VISIDS 3500	0-2	0-2	0-2
Vindicator	ECS-5000	0.5	1	unknown
Westinghouse	SE5850	1-5	2-6	2-6
Westinghouse	SE6000	unanswered	unanswered	unanswered
Westinghouse	Alto 818SX	0.6	1	unknown
Westinghouse	SE422	0.4	1	unknown

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Time from receipt of stimulus event on the internal network (from annunciator to collector/multiplexer/etc. but not necessarily to sensor) to process and change both the entire display screen (e.g., depict a new map) and also the on-screen indicator of that event from one state indicator to another, visually signaling the event to the operator.

VII.A(2)a - No Load System

VII.A(2)b - 5 Simultaneous Events

VII.A(2)c - 25 Simultaneous Events

Firm Short Name	System Name	VII.A(2)a	VII.A(2)b	VII.A(2)c
Assessment	System 9000	unknown	unknown	unknown
Asset Contrl	ACS-100	1	unknown	unknown
CECO	Auto-Guard	unknown	unknown	unknown
CSI	I/NET	2	2	2
DAQ	Starwatch	2	2	2
DSX	DSX-1030	1	1	1
Edicon	Envoy 7000	1	~2	~7.2
ENSEC	ES2000 <i>Plus</i>	unknown	unknown	unknown
Epic Data	SMS	<2.5	<2.5	<5.5
Hirsch	Digitrack Models	<1.5	<2	<4
Logiplex	Logiplex System	0.45	1	5
MARTEK	Graphic Link	0.1	0.2	1
MDI	SAFENet	1	1	1-3

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	3	3	3
Northern Computers	PC-PAC	unknown	unknown	unknown
PCSC	Linc Net	1	3	5
SAIC	SAISMS	unanswered	unanswered	0.8
Sensormatic	AC500	<5	unknown	unknown
SMF	ACS51	unanswered	unanswered	0.25
Software House	C-CURESystem 1 Plus	<2	<2	<2
Stellar	MCM-1000	unknown	unanswered	unanswered
Sygnatron	Sygneplex	1	2	unknown
Synergistics	WA-PAC	unknown	unknown	unknown
Tate	TIS4000	1	1	1
Vikonics	VISIDS 3500	0-2	0-2	0-2
Vindicator	ECS-5000	1	1	unknown
Westinghouse	SE5850	unanswered	unanswered	unanswered
Westinghouse	SE6000	unanswered	unanswered	unanswered
Westinghouse	Alto 818SX	unanswered	unanswered	unanswered
Westinghouse	SE422	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

For a typical installation of your security system, what is the time from receipt of astimulus event at a remote sensor to process and change both the entire display screen (e.g., depict a new map) and the on-screen indicator of that event (e.g., an icon) to visually signal that event to the operator.

VII.A(3)a - No Load System

VII.A(3)b - 5 Simultaneous Events

VII.A(3)c - 25 Simultaneous Events

Firm Short Name	System Name	VII.A(3)a	VII.A(3)b	VII.A(3)c
Assessment	System 9000	unknown	unknown	unknown
Asset Contr!	ACS-100	1	2	unknown
CECO	Auto-Guard	unknown	unknown	unknown
CSI	I/NET	2	2	2
DAQ	Starwatch	2	2	2
DSX	DSX-1030	1	1	1
Edicon	Envoy 7000	unknown	unknown	unknown
ENSEC	ES2000 <i>Plus</i>	unknown	unknown	unknown
Epic Data	SMS	<2	<15	<25
Hirsch	Digitrack Models	<1.5	<2	<4
Logiplex	Logiplex System	0.5	1	5
MARTEK	Graphic Link	0.2	0.3	1
MDI	SAFENet	1	1	1-3

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	3	3	3
Northern Computers	PC-PAC	unknown	unknown	unknown
PCSC	Linc Net	1	3	5
SAIC	SAISMS	unanswered	unanswered	0.8
Sensormatic	AC500	unknown	unknown	unknown
SMF	ACS51	unanswered	unanswered	1
Software House	C-CURESystem 1 Plus	<2	<2	<2
Stellar	MCM-1000	unknown	unanswered	unanswered
Sygnatron	Sygnplex	1	2	unknown
Synergistics	WA-PAC	unknown	unknown	unknown
Tate	TIS4000	2	2	2
Vikonics	VISIDS 3500	0-2	0-2	0-2
Vindicator	ECS-5000	0.5	1	unknown
Westinghouse	SE5850	unanswered	unanswered	unanswered
Westinghouse	SE6000	unanswered	unanswered	unanswered
Westinghouse	Alto 818SX	unanswered	unanswered	unanswered
Westinghouse	SE422	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Time from receipt of stimulus event on the internal network (from annunciator to collector/multiplexer/etc. but not necessarily to sensor) to process and activate a sound generating device or speaker, audibly signaling the event to the operator.

VII.A(4)a - No Load System

VII.A(4)b - 5 Simultaneous Events

VII.A(4)c - 25 Simultaneous Events

Firm Short Name	System Name	VII.A(4)a	VII.A(4)b	VII.A(4)c
Assessment	System 9000	unknown	unknown	unknown
Asset Contrl	ACS-100	1	unknown	unknown
CECO	Auto-Guard	unknown	unknown	unknown
CSI	I/NET	2	2	2
DAQ	Starwatch	1	1	1
DSX	DSX-1030	1	1	1
Edicon	Envoy 7000	1	~2	~7.2
ENSEC	ES2000 <i>Plus</i>	unknown	unknown	unknown
Epic Data	SMS	<1	<5	<25
Hirsch	Digitrack Models	<1.5	<2	<4
Logiplex	Logiplex System	0.5	1	5
MARTEK	Graphic Link	0.6-1.1	0.6-1.1	1.6-2.1
MDI	SAFENet	unknown	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	3	3	3
Northern Computers	PC-PAC	unknown	unknown	unknown
PCSC	Linc Net	0.3	0.5	1
SAIC	SAISMS	unanswered	unanswered	0.8
Sensormatic	AC500	unknown	unknown	unknown
SMF	ACS51	unanswered	unanswered	0.25
Software House	C-CURESystem 1 Plus	<2	<2	<2
Stellar	MCM-1000	unanswered	unknown	unanswered
Sygnatron	Sygneplex	0.5	1	unknown
Synergistics	WA-PAC	1	unknown	unknown
Tate	TIS4000	0.5	0.5	0.5
Vikonics	VISIDS 3500	0-2	0-2	0-2
Vindicator	ECS-5000	0.5	1	unknown
Westinghouse	SE5850	unanswered	unanswered	unanswered
Westinghouse	SE6000	unanswered	unanswered	unanswered
Westinghouse	Alto 818SX	unanswered	unanswered	unanswered
Westinghouse	SE422	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Time from receipt of stimulus event on the internal network, to process and activate a live CCTV display of the event area.

VII.A(5)a - No Load System

VII.A(5)b - 5 Simultaneous Events

VII.A(5)c - 25 Simultaneous Events

Firm Short Name	System Name	VII.A(5)a	VII.A(5)b	VII.A(5)c
Assessment	System 9000	unknown	unknown	unknown
Asset Contrl	ACS-100	unknown	unknown	unknown
CECO	Auto-Guard	unknown	unknown	unknown
CSI	I/NET	unknown	unknown	unknown
DAQ	Starwatch	1	1	1
DSX	DSX-1030	2	2	2
Edicon	Envoy 7000	unanswered	unanswered	unanswered
ENSEC	ES2000 <i>Plus</i>	unknown	unknown	unknown
Epic Data	SMS	unknown	unknown	unknown
Hirsch	Digitrack Models	<1.5	<2	<4
Logiplex	Logiplex System	1	1.5	5.5
MARTEK	Graphic Link	0.1	0.2	1
MDI	SAFENet	unknown	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	unknown	unknown	unknown
Northern Computers	PC-PAC	unknown	unknown	unknown
PCSC	Linc Net	0.3	0.5	1
SAIC	SAISMS	unanswered	unanswered	1
Sensormatic	AC500	unknown	unknown	unanswered
SMF	ACS51	unanswered	unanswered	1.5
Software House	C-CURESystem 1 Plus	<5	<5	<5
Stellar	MCM-1000	unknown	unanswered	unanswered
Sygnatron	Sygneplex	1	1.5	unknown
Synergistics	WA-PAC	0	0	0
Tate	TIS4000	0.1-0.2	0.1-0.2	0.1-0.2
Vikonics	VISIDS 3500	0-2.3	0-2.3	0-2.3
Vindicator	ECS-5000	0.8	1.5	unknown
Westinghouse	SE5850	unanswered	unanswered	unanswered
Westinghouse	SE6000	unanswered	unanswered	unanswered
Westinghouse	Alto 818SX	unanswered	unanswered	unanswered
Westinghouse	SE422	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Time from receipt of stimulus event on the internal network, to process and activate a recording of the CCTV display of the event area.

VII.A(6)a - No Load System

VII.A(6)b - 5 Simultaneous Events

VII.A(6)c - 25 Simultaneous Events

Firm Short Name	System Name	VII.A(6)a	VII.A(6)b	VII.A(6)c
Assessment	System 9000	unknown	unknown	unknown
Asset Contrl	ACS-100	unknown	unknown	unknown
CECO	Auto-Guard	unknown	unanswered	unanswered
CSI	I/NET	unknown	unanswered	unanswered
DAQ	Starwatch	1	1	1
DSX	DSX-1030	1	1	1
Edicon	Envoy 7000	unanswered	unanswered	unanswered
ENSEC	ES2000 <i>Plus</i>	unknown	unknown	unknown
Epic Data	SMS	unknown	unknown	unknown
Hirsch	Digitrack Models	<1.5	<2	<4
Logiplex	Logiplex System	1	1.5	5.5
MARTEK	Graphic Link	0.1	0.2	1
MDI	SAFENet	unknown	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	unknown	unknown	unknown
Northern Computers	PC-PAC	unknown	unknown	unknown
PCSC	Linc Net	0.3	0.5	1
SAIC	SAISMS	unanswered	unanswered	1
Sensormatic	AC500	unknown	unknown	unknown
SMF	ACS51	unanswered	unanswered	2
Software House	C-CURESystem 1 Plus	<5	<5	<5
Stellar	MCM-1000	unanswered	unknown	unanswered
Sygnatron	Sygneplex	1	1.5	unknown
Synergistics	WA-PAC	0	0	0
Tate	TIS4000	0.1-0.2	0.1-0.2	0.1-0.2
Vikonics	VISIDS 3500	0-2.3	0-2.3	0-2.3
Vindicator	ECS-5000	unknown	unknown	unknown
Westinghouse	SE5850	unanswered	unanswered	unanswered
Westinghouse	SE6000	unanswered	unanswered	unanswered
Westinghouse	Alto 818SX	unanswered	unanswered	unanswered
Westinghouse	SE422	unanswered	unanswered	unanswered

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Time from receipt of stimulus event on the internal network, to process (including verification) and activate a door/portal release.

VII.A(7)a - No Load System

VII.A(7)b - 5 Simultaneous Events

VII.A(7)c - 25 Simultaneous Events

Firm Short Name	System Name	VII.A(7)a	VII.A(7)b	VII.A(7)c
Assessment	System 9000	unknown	unknown	unknown
Asset Contrl	ACS-100	0.0	0.0	0.0
CECO	Auto-Guard	unknown	unanswered	unanswered
CSI	I/NET	1	1	1
DAQ	Starwatch	0.5	0.5	0.5
DSX	DSX-1030	0.25	0.25	0.25
Edicon	Envoy 7000	unanswered	unanswered	unanswered
ENSEC	ES2000 <i>Plus</i>	unknown	unknown	unknown
Epic Data	SMS	<1	<5	<5
Hirsch	Digitrack Models	<0.5	<0.5	<0.5
Logiplex	Logiplex System	0.5	0.6	0.6
MARTEK	Graphic Link	0.2	0.3	2
MDI	SAFENet	1	1	1

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	1	1	1
Northern Computers	PC-PAC	unknown	unknown	unknown
PCSC	Linc Net	0.3	0.5	1
SAIC	SAISMS	unanswered	unanswered	0.5
Sensormatic	AC500	unknown	unknown	unknown
SMF	ACS51	unanswered	unanswered	4
Software House	C-CURESystem 1 Plus	<1	<1	<1
Stellar	MCM-1000	unknown	unanswered	unanswered
Sygnatron	Sygnplex	2	2.5	unknown
Synergistics	WA-PAC	unknown	unknown	unknown
Tate	TIS4000	0.5-1	0.5-1	0.5-1
Vikonics	VISIDS 3500	2-4	2-4	2-4
Vindicator	ECS-5000	0.25	0.25	0.5
Westinghouse	SE5850	unanswered	unanswered	unanswered
Westinghouse	SE6000	unanswered	unanswered	unanswered
Westinghouse	Alto 818SX	0.6	1	unknown
Westinghouse	SE422	0.5	unknown	unknown

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

4.9 SYSTEM CONFIGURATION DATA

VIII - Please provide the following information concerning the system which would meet the performance levels you specified at VII above.

System Level

System Model

CPU Type/Model

Firm Short Name	System Name	System Level	System Model	CPU Type Model
Assessment	System 9000	unanswered	unanswered	unanswered
Asset Contrl	ACS-100	minicomputer	PDP-11/73	unanswered
CECO	Auto-Guard	personal computer	Autoguard 2.0	486
CSI	I/NET	personal computer	INET	486
DAQ	Starwatch	minicomputer	SUPERGEN 5000	80486 33 MHz
DSX	DSX-1030	personal computer	DELL 486 66MH2	486/66 MHz
Edicon	Envoy 7000	personal computer	4210DT	workstation: 486/50 MHz, server: 486/33 MHz
ENSEC	ES2000 <i>Plus</i>	personal computer	PC compatible	80486
Epic Data	SMS	personal computer	unanswered	486/50 MHz
Hirsch	Digitrack Models	personal computer, minicomputer, other	unanswered	80486, pentium, other
Logiplex	Logiplex System	personal computer, minicomputer, main frame, other	Intel 366-486 AT compatible	486/66-486 50 TE
MARTEK	Graphic Link	personal computer	IBM Compatible	80486
MDI	SAFENet	personal computer	IBM Compatible 486/50 MHz	80486/50 MHz

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	personal computer	unanswered	80486
Northern Computers	PC-PAC	personal computer	Dell 486/50	486
PCSC	Linc Net	personal computer	386 DX, 40 MHz	386 DX
SAIC	SAISMS	unanswered	various 3100 6000 and fault tolerant	micro-VAX
Sensormatic	AC500	personal computer, other	486, RS/6000	486 RISC
SMF	ACS51	personal computer, minicomputer, other	IBM 7546	Intel 80486
Software House	C-CURESystem 1 Plus	minicomputer	VAX	VAX 4000
Stellar	MCM-1000	personal computer	MCM-1000-4	PS2/70
Sygnatron	Sygneplex	minicomputer	VAX 4000 Model 200	unanswered
Synergistics	WA-PAC	personal computer	IBM	80386
Tate	TIS4000	other (RISC workstations on ethernet)	SUN Sparc DEC Alpha series	M68020 front-end processors
Vikonics	VISIDS 3500	personal computer	VISIDS 3500	80486/33 MHz
Vindicator	ECS-5000	personal computer	ECS-series with DES-net products	SPARC/ INTEL 80486
Westinghouse	SE5850	personal computer	HP Vectra, DEC, Dell, IBM	INTEL 80386, 80486
Westinghouse	SE6000	personal computer	HP Vectra, DEC PC 433ST, DELL, IBM	INTEL 80386, INTEL 80486
Westinghouse	Alto 818SX	other	ALTO 818SX	Motorola 6809
Westinghouse	SE422	unanswered	unanswered	Motorola 6809

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

VIII - Please provide the following information concerning the system which would meet the performance levels you specified at VII above.

Total Main Memory in Megabytes

Total Hard Disk in Megabytes

Operating System

Firm Short Name	System Name	Total Main Memory	Total Hard Disk	Operating System
Assessment	System 9000	unanswered	unanswered	unanswered
Asset Contrl	ACS-100	4 mb	32 mb	RT-11
CECO	Auto-Guard	16 mb	500+ mb	UNIX
CSI	I/NET	2, 048 mb	up to gb	DOS
IJAQ	Starwatch	36 mb	2,800 mb	CTOS
DSX	DSX-1030	8 mb	200 mb	DOS
Edicon	Envoy 7000	12 mb (standard), 24 mb (expandable)	201 mb (standard), 1.2 gb (expandable)	OS/2
ENSEC	ES2000 <i>Plus</i>	8 mb	120 mb	QNX 4.X
Epic Data	SMS	32 mb	1,000 mb	UNIX/ DOS (Display)
Hirsch	Digitrack Models	16 mb	120+ mb	Windows NT
Logiplex	Logiplex System	8 mb	>500 mb	XENIX-UNIX
MARTEK	Graphic Link	4 mb	100 mb	Graphic Link started from MS-DOS
MDI	SAFENet	8 mb	dual 100 mb	Concurrent DOS

SURVEY RESULTS

Integrated Alarm Annunciation and Entry Control Systems

Mosler	LINX	16 mb	120 mb	UNIX
Northern Computers	PC-PAC	8 mb	300 mb	OS 2/DOS 6.0/ RMX
PCSC	Linc Net	8 mb	100 mb	Deskview
SAIC	SAISMS	32 mb	1,200 mb	VMS
Sensormatic	AC500	486, 8 mb, RS/6000, 16 mb	486-340 mb, RS/6000 800 mb	486-SCO XENIX, RS/6000 AIX
SMF	ACS51	8 mb	520 mb	SCO UNIX V
Software House	C-CURESystem 1 Plus	MAX 64 mb	381 mb	VMS
Stellar	MCM-1000	4 mb	80 mb	DOS 5.0 or higher
Sygnatron	Sygneplex	32 mb	720 mb	VMS
Synergistics	WA-PAC	2 mb	40 mb	DOS
Tate	TIS4000	24 to,32 mb/ workstation	800-1.5 gb/ workstation	POSIX/ UNIX
Vikonics	VISIDS 3500	8 mb	120 mb	Interactive UNIX 3.2
Vindicator	ECS-5000	16 mb	350 mb	SUN OS/ Microsoft NT
Westinghouse	SE5850	2 mb	40 mb	DOS
Westinghouse	SE6000	64 mb	1,200 mb	SCO UNIX
Westinghouse	Alto 818SX	0.5 mb	0 mb	unanswered
Westinghouse	SE422	0.5 mb	0 mb	unanswered

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Batavia, IL 60510

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US Secret Service
1800 G Street NW
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US Secret Service
Technical Security Division
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