Enterprise Buildings Integrator R400

Specification and Technical Data



KEY FEATURES

- Total integration of Access Control, Security, Surveillance, Heating Ventilation and Air Conditioning, Energy Management and Life Safety systems
- Integration with a diverse range of devices, enterprise systems, Internet and intranet sources allowing integrated building management of key facility control and information
- Uses industry-standard hardware and Windows XP and Windows 2003 Server operating systems. Windows Vista support for Operators is included in EBI R400 Service Pack 1
- Supports for leading open standards: BACnet, LonMark, ODBC, OPC, and Modbus
- UL Listed to Standards UL864 (Fire), UL2017 (Signaling Systems), UL916 (Energy Management Systems), UL1017, UL1076 (Security), UL1610 (Central Station) and UL294 (Access Control)
- Web-based user interface provides operators or facility engineers easy access and puts the user in control of every situation
- Suitable for use in a restricted Pharmaceutical environment requiring conformance to 21 CFR Part 11 for electronic records and electronic signatures

Designed and developed to International Standards ISO 9001 for quality

HONEYWELL BUILDING

MANAGER

Building Manager meets building management and HVAC control needs by providing interfaces to leading open system solutions and HVAC devices.

HONEYWELL SECURITY MANAGER

Security Manager collects information from security, access control and surveillance devices, ensuring protection of your people, assets and intellectual property.

HONEYWELL LIFE SAFETY MANAGER



HONEYWELL DIGITAL VIDEO MANAGER



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Digital Video Manager seamlessly integrates surveillance of your facility using cameras connected directly to your LAN, enabling flexible event-based recording and viewing.

HONEYWELL ENERGY MANAGER



Energy Manager monitors, validates and optimizes your energy usage enabling you to help the environment while saving money. Enterprise Buildings Integrator (EBI) is a highly configurable integrated building management system providing an efficient and reliable way of ensuring the security, safety and comfort of people and the effective operation of buildings and facilities.

EBI provides a scalable suite of solutions that can be tailored to key facility management requirements. By combining these applications, EBI is flexible enough to adapt to a range of industries including large commercial buildings, industrial facilities, airports, university campuses, pharmaceutical and healthcare facilities, and government locations. It can be inexpensively tailored to meet specialized industry requirements.

For global companies, EBI is the ideal system, allowing the operator interface to be translated into the local language, and enabling centralized monitoring and control of locally or globally distributed sites.

EBI integrates with Open System standards, existing enterprise systems, and with Internet and intranet applications. This allows you to choose the best field solutions for your building and to seamlessly integrate information into EBI for further processing, reporting or distribution.

EBI provides operators, supervisors, and managers with a sophisticated Web-style interface to enable personnel to easily monitor and control buildings at one or more sites. EBI uses technology such as HTML for creating graphic displays. EBI allows remote or partially automated monitoring and control of your facility.

EBI runs on industry-standard personal computers using the Windows XP and Windows 2003 Server operating systems. EBI R400 Service Pack 1 will also introduce support for Windows Vista on the EBI clients and operator stations.



SYSTEM ARCHITECTURE

EBI is a client/server architecture that provides a scalable system that accommodates configurations ranging from a small single-node system to an extended system with multiple servers and Stations connected across LANs or WANs.

The EBI Server runs on the multi-user, multi-tasking, industry-standard Windows XP and Windows 2003 Server operating systems. The server runs application software that communicates with field controllers and updates both a real-time and relational database.

The EBI Server also acts as the file server for displays and photo images. EBI client Station provides a high resolution, color graphical Human Machine Interface to the EBI Server. Up to 40 simultaneous Station connections (80 connections with EBI R400 Service Pack 1) are available on a single EBI Server, allowing a limitless number of users to access these connections on a first-come, first-served basis. An operator may use EBI Station or a Web browser to perform a range of facility management tasks such as:

- View and respond to alarms
- Schedule equipment operation
- View, manipulate, and analyze data acquired from various controllers
- View custom displays, cardholder information, or photo images and create Photo-ID cards

The comprehensive networking capability of EBI, based on the industry standard TCP/IP protocol, allows communication to other EBI systems, PC networks, corporate management information systems, or enterprise systems via local and wide area networks.



High Availability Architecture

For systems requiring superior fault tolerance, EBI can be configured for high-availability architecture applications to operate in a redundant hot standby configuration. To achieve this level of reliability, there are two servers: one is dedicated as the primary server and the other acts as the standby server. If the primary server encounters a problem, the standby server automatically assumes control and reconnects controllers and clients within 10 seconds without loss of data. The EBI redundancy solution also insulates you against design faults seen in other solutions, as EBI does not replicate all operating system software between the two servers, ensuring that malware or driver and Operating System problems are NOT replicated to your backup system.

Distributed System Architecture

EBI Servers can also be connected together in a Distributed System Architecture, allowing very large or geographically distributed sites to be operated as a single system.

Alternatively, this architecture allows autonomous EBI nodes to communicate alarms and cardholder information through a network with a minimum of engineering effort.

A Distributed System Architecture enables multiple facilities to be operated in an efficient and consistent way across your entire organization without sacrificing the independence of each office.



SYSTEM INTEGRATION

EBI provides an open system architecture that consolidates supervisory functions such as alarm, events, reporting and control into a common user framework. EBI then allows you to choose from a variety of controllers, standard hardware devices, and communications interfaces that can be integrated, into a central system that maximizes the performance of your building or facility. From a modest sized Building Manager system, EBI can be expanded through license to a fully integrated Security, Life Safety, Energy Management and / or Building Management solution. It's Easy.

EBI can integrate with the following subsystems:

- Access controllers and access card readers
- Security intrusion detection panels
- HVAC monitoring and control
- Life safety monitoring and control
- Energy management energy usage and load control
- Lighting control
- LAN/WAN based Honeywell Digital Video Manager
- Industrial process controllers
- Enterprise resource management systems (SAP, PeopleSoft)
- Time and attendance
- Asset location and tracking
- Maintenance management
- Web applications
- Mobile Phone SMS, paging and SNMP notification systems

EBI supports local or remote equipment connection via RS-422, RS-232, RS-485, or via IEEE 802.3 (Ethernet). EBI gathers information from a wide range of field devices and presents data in a unified and consistent format.



DIGITAL VIDEO INTEGRATION

EBI enables flexible surveillance of your facility using Honeywell Digital Video Manager. Cameras can be located anywhere in the building and connected back to EBI using a LAN, removing the need for complex cabling and racks of analog video equipment. Video and audio is digitized using standard video streaming devices and then can be viewed in real-time at any EBI Station. Recording of video and audio can be activated by operators on demand or you can automate recording to be linked with any events from within EBI. Most importantly, by using pre-recording, the video is captured from before the alarm or disturbance occurred. A recording database can easily be searched to find the right clip for investigators. Digital Video Manager also has advanced Video Analytics algorithms allowing specific behaviors to be detected by cameras and alarmed in EBI. Operators can be alerted to monitors only when there is activity on them. By integrating digital video, EBI provides a flexible, scalable and intelligent surveillance solution.

can save time and minimize damage when an emergency occurs.

The integration of fire protection into EBI also means that the other facility systems are aware of and can be used to assess or respond to alarm conditions. The security system can maintain overall site protection, while unlocking specific doors based on the alarm location to speed egress and allow quick access by emergency responders. Digital video and audio can provide a comprehensive assessment of the alarm location on the EBI Station as soon as the alarm is received, allowing the operator to immediately assess the event, while also providing continuous recording of any doors being used for egress. EBI can even be used to compile a roster at the designated emergency evacuation point to see that all personnel that were in the area are accounted for.

When a system is trusted to monitor and control life safety functions, it is important to look for products that have been specifically tested and certified for this demanding application. The EBI Life Safety Manager has been tested and listed by experts at Underwriters Laboratories (UL) under many categories including the most stringent category for fire control products, allowing its use as the primary means to monitor and control facility fire protection.



LIFE SAFETY MANAGEMENT

EBI provides a consolidated view of critical building systems during emergency situations, and acts as a single point of control for quick response. Automating complex system relationships through EBI, such as activating dampers, starting smoke purge fans, stopping processes and isolating utilities

OPEN SYSTEMS

In addition to being based on a range of open technologies, EBI supports a wide variety of open systems standards for integrating other systems or subsystems. The Open System standards supported are listed in the following sections.

HTML

EBI's extensive graphics builder creates displays in native HTML format, ensuring EBI has the most open graphics capability in the market. These displays can be viewed in EBI Stations and also through Microsoft's Internet Explorer web browser.

LonWorks

LonWorks is a network of interoperable devices from multiple vendors conforming to the LonMark standard (ANSI/CEA 709.1). EBI supports both Honeywell and third-party LonWorks devices that conform to this LonMark standard. The interface supports both read and write of Network Variables and Configuration Properties. The EBI LonWorks Interface is based on Echelon's LNS (LonWorks Network Services) Database to provide compatibility with third-party LON tools. EBI supports the latest version of LNS (3.2) available from Echelon.

Connections between EBI and LON Networks can be direct (using a PCLTA-10), via a serial port (using a SLTA-10) or via the network using an Ethernet to LonWorks Router.

BACnet

Building Automation Control Network (BACnet) is a standard communication protocol developed by the American Society of Heating Refrigeration, and Air Conditioning Engineers (ASHRAE) for Building Automation Systems (BAS) with HVAC and lighting monitoring and control functionality. EBI supports ASHRAE Standard (SSPC 135-2004) implementing both BACnet Operator Workstation Client and Server systems, and BACnet Gateway functionality. EBI supports BACnet over Ethernet and IP communications. A BACnet PICS (Protocol Implementation Conformance Statement) document is available on request which details EBI support for BACnet Standard Objects and Application Services.

OPC

EBI supports OLE for Process Control (OPC) 2.0 Data Access. This interface allows EBI to read and write to an OPC Data Server as an OPC client. This capability provides access to a wide range of third-party OPC Data Servers allowing cost-effective integration of third-party devices. An EBI Server can also be an OPC Server. OPC Client and Server capabilities can be used as a means for exchanging data between two OPC-compliant systems to provide integration at a system level.

The new OPC Alarm and Event Server enable EBI to support mapping of alarm/event properties to OPC notification properties to be processed by an OPC notification client. The OPC Alarm and Event Server support the OPC Alarm and Events Specification Version 1.02 and the OPC Common Definitions & Interfaces specification Version 1.0.

MODBUS

Modbus is a good general-purpose interface and de facto standard communications protocol that can be used to integrate subsystems and Programmable Logic Controllers (PLC) into EBI. The EBI interface is a Modbus "Master" and uses the Modbus RTU, ASCII, or TCP (Ethernet) protocol to integrate Modbus slave PLCs and other subsystems.

ODBC

(ODBC) Open Database Connectivity is an industrystandard for database access. EBI provides read-only ODBC access to its real-time database as well as the relational cardholder database. This may be used to extract information from EBI using ODBC-compliant reporting tools or enterprise management systems.



OPERATOR INTERFACE

In critical situations, it is important to provide data to a user in a clear and concise format. Station, the EBI operator interface displays high-resolution color graphics that can be tailored to the requirements of each individual facility. Extensive use of Web-style menus, toolbars, and icons allow intuitive navigation and fast access to important information. The operator interface is designed to accommodate novice and experienced operators alike.

The operator interface allows a user to perform the following tasks:

- Display and control field equipment
- Acknowledge alarms on a priority basis
- Display point status and history information
- Display information about cardholders
- Define and alter time schedules
- Initiate printing of reports
- View, archive and retrieve event logs
- Monitor data communications channels
- Configure system parameters
- Select and control Digital Video and CCTV cameras
- Display information from Internet and Intranet sites
- Record and play back digital video
- View and track moving assets or people

Responding to alarms is crucial and the operator always needs to see the most important alarm. In

Station, there is a dedicated alarm line which indicates the most recent, highest priority, unacknowledged alarm.

Stations also display status information, including:

- All points of a certain type in a particular state
- Points in alarm pending acknowledgment and that have been acknowledged
- Fire detection points status
- Communication failures on the System Status Display
- Stations and printers currently off-line



As a convenient alternative, Microsoft Internet Explorer (IE) can be used to provide a fast and secure casual interface to EBI. This HMIWeb Browser interface is very functional but operates without the standard Station features that include the Alarm and Status Zone, and the Station toolbar and menus. As it operates inside Internet Explorer, the user can quickly add favorites within IE to provide immediate access to their preferred EBI graphics. The HMIWeb Browser client operates either via your local network, or through the Internet with some restrictions applicable when used over the Internet.

HMIWeb

Custom displays are created using HMIWeb Display Builder. A typical custom display includes a static background, and dynamic objects that indicate the status and alarm condition of relevant devices. Popup faceplates showing more information about a device can also be used. Also, controls, such as buttons, can be added so that users can execute tasks, call up other displays and generate reports. The HTML format of custom displays provides easy interoperability with other Web technology.

Video Integration

Video and audio surveillance is essential for monitoring what is happening in any facility. EBI can integrate live video into custom displays, enabling one operator to view many parts of a building from a central location. It also allows remote verification of cardholders against their stored photo image for additional control of access to regulated areas. Operators may also select and control PTZ cameras using display controls. Video may be integrated from traditional analog CCTV systems or from Honeywell's Digital Video Manager solution.

Web Enabled

HMIWeb displays make use of Web technologies. Not only can they be created with native HTML content, they can be viewed in either Station or in Windows Internet Explorer. Full control of your facility is possible through a browser when connected over a local network. When used over the internet, then control of EBI graphics and displays remains identical, with some restrictions applied to security controls and video surveillance EBI's embracement of open technologies ensures that operators have the best information at their fingertips.

EBI can integrate existing intranet or Internet pages into your custom displays, enabling EBI data to be

matched with external information such as weather, utility prices or key company policies and procedures. Alternatively, data from EBI can be integrated into your company intranet, providing building occupants with live data regarding their comfort or other facility information. All such access can be strictly controlled.

Operator Security

EBI offers sophisticated methods for controlling access to sensitive data.

Operator Sign-On

Each operator has a unique identification (such as full names) and password that defines their security profile. All EBI passwords are encrypted when stored and transferred. If an operator continually attempts to sign on to an EBI Station without the correct operator password, he/she will be locked out of the system for a configurable amount of time.

It is also built to provide user authentication using your Windows Operator ID or Windows Group Account, or via an LDAP server, to ensure operators have quick consistent access into EBI. This ensures operators only need to remember one set of credentials, and need only sign on to the system once.

Security and Control Levels

In EBI, it is possible to restrict and control what activity operators can perform by giving them different security levels. The system supports six different levels of operator security.

In addition to this, EBI incorporates control levels to limit manual control of doors, locks or sensors. Only operators with appropriate control levels can issue commands to these points. EBI can also restrict the commands an operator can issue, for example an operator may be allowed to lock a door but not unlock it.

COMPLIANCE to 21 CFR PART

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In highly regulated environments such as Pharmaceutical processing plants, a supervisor must formally approve any changes to a validated environment. EBI provides supervisors the ability to review and approve changes to the system configuration using electronic signatures. An electronic signature can be either a single or a double signature and "signing" requires operators to re-enter their password along with reasons and meanings behind the change in the system.

REAL-TIME DATABASE

EBI provides overall system management by collecting information from its field devices and using this intelligently to improve system monitoring and control. For example:

- A point exceeding a given temperature automatically triggers a particular report
- A perimeter fence alarm triggers cameras to switch to the appropriate location
- An alarm triggers a camera to begin recording

EBI communicates to controllers that have distributed intelligence. The local controller determines normal access control decisions or HVAC control strategies without input from the server. If the communications link between a controller and the server fails, normal system functions continue to operate and the controller buffers transactions. When the communications link is re-established, this information is reported back to the server. Changes in the server database may be downloaded to the relevant subsystem controllers.

Schedules

EBI provides extensive scheduling functions both from the EBI server itself via a point control scheduler and the global scheduler, and from controller-specific schedules for Honeywell and various 3rd party controllers. Occupancy scheduling can be defined by selecting the appropriate dates and times from a simple Outlook style calendar display. A single EBI schedule can define system behaviour on any weekday, weekend or holiday. In addition, a special occasion schedule can be applied to override the normal occupancy schedules to handle special events.

Point Groups

EBI can group points based on alarm inputs, outputs, controller, area, doors, or elevators. An operator can then control a group or monitor it as one entity. A summary display shows information about the groups, including the number of points in a group and the number of points in each state.

Event Initiated Programs

EBI allows the triggering of additional controls or system functions from input points. When the input point changes state, this may cause a range of actions such as:

- Displaying cardholder information when a card is presented at a reader
- Enabling output controls based on a logical combination of inputs
- Alarming a master point based on the alarm states of subordinate points
- Averaging a set of temperatures into the value of one point
- Process shutdown based on critical fire or utility alarm

Database Partitioning

EBI can easily support the complex requirements of large or multi-tenanted systems. Using the EBI Enterprise Model, your facility is logically partitioned into separate Locations and your Cardholders are logically partitioned into separate Organizations. Each Location / Organization may include a logical set of points, cardholders, cards, reports, and displays. Each operator is then allowed to view, monitor, and control only those points or cardholders within their designated Location or Organization. In this way, you can easily prevent operators from viewing information from another tenancy or another part of the system that is not relevant to them.



ALARM MANAGEMENT

The comprehensive alarm management facilities of EBI ensure that operators are immediately notified of any attempted security violations or building anomalies. Operators can easily respond to alarms and quickly find relevant information by using the dedicated function keys.

Acknowledge. Use the mouse to select the alarm point on the display and either press the acknowledge key, or use the convenient right click context menu, to acknowledge the alarm. This action will automatically be recorded in the system event file and, optionally, on an alarm printer.

Alarm Summary. Press the Alarm Summary key at any time to view a display showing all currently active alarms. The alarm messages are color-coded to show priorities. From the summary display, you can acknowledge alarms and access an associated display defined for each point. You can sort alarms or filter only for certain characteristics. You can even add comments to alarms or print an appropriate alarm list.

Associated Display. Select the Associated Display and be immediately taken to a graphic showing where in your facility the alarm is coming from.

EBI annunciates alarms as follows:

- Audible Tone. The audible tone is based on a *.wav file on each Station.
- Alarm Line. A dedicated alarm line appears on all displays and shows the most recent, highest priority, unacknowledged alarm in the system.
- Alarm Indicator. An alarm indicator appears on all displays and flashes when there are any unacknowledged alarms.
- Alarm Summary Display. An alarm summary display shows all alarms in the system and color-codes them to indicate priority and severity.
- Alarm Printer Output. Alarm messages are printed on the alarm printer for a hard copy record.

Alarms annunciate at Stations even if no user is currently signed on. Even if Station is minimized, the audible tone sounds and the Station icon flashes to indicate that there is an alarm. Alarms can drive an external communicator such as a light or siren.

Alarms can be associated with different point states for digital points or special conditions such as high or low values or rates of change for analog points. Each alarm is assigned a different priority: journal, low, high or urgent. Each alarm priority supports up to 15 sub-priorities within it. This allows for sophisticated alarm prioritization. Alarms can easily be sorted and filtered.

It is possible to automatically elevate an alarm to the next highest priority level or generate an additional alarm if an operator does not acknowledge an alarm within a certain time, ensuring alarms are always handled promptly.

For each alarm EBI can automatically keep count of how many times this same alarm has recurred, which allows the Alarm Summary Display to remain less cluttered as common or nuisance alarms are aggregated into a single alarm message. In addition EBI automatically calculates alarm metrics to quickly tell you the number of urgent, high and low priority alarms you have in each location. These alarm metrics can be historized and trended, and reported on at shift boundaries or other times.

With the Advanced Alarm Management feature, you can provide further information to assist operators. When an operator acknowledges an alarm, they proceed to an alarm instruction page which details appropriate alarm handling procedures. After following these procedures, the operator can enter a response that indicates the actions taken to correct the situation, or can choose from a preconfigured list of responses. This ensures operators have the information they need to be fully responsible and accountable for handling alarms. Operator responses are logged to an event file for subsequent analysis.

Alarm Pager

Alarm Pager is an additional EBI option which allows alarms to be routed to pagers, mobile phones, email and SNMP managers. This is ideal if your operators need to move around the facility but want to be notified of critical alarms. It is possible to nominate a range of points and the alarm priority which will cause the external system to be notified. For example, you may wish to send urgent priority alarms on your chiller to the Building Supervisor, but high and urgent priority alarms from security points to the Head of Security.

The Alarm Pager option uses the industry standard Paging Entry Terminal (PET) protocol, Telocator Alphanumeric Protocol (TAP), or the UCP protocol to communicate with Pager Service Providers for telephone paging.

EVENT MANAGEMENT

Events include alarms, point changes of state, cardholder movements, changes in system status and all operator actions. As system events occur, EBI creates a journal of the events in an event file. Journalized event entries include a description, condition, message, time of occurrence, and responsible operator.

The system event file stores event data in an on-line buffer. It is possible to store as many events as necessary—subject only to disk space on the server. When the on-line buffer becomes full, EBI transfers the event data to an archived buffer and notifies the operator to save the file to external media. The online buffer can continue to store events without interruption. An operator can retrieve current or archived system event data for use on-line or in the reports.



HISTORY AND TRENDING

EBI provides continuous history about how operational data and points in the system have been changing with time. EBI can sample and store analog and status point values as historical data. EBI supports a range of different history collection rates. Both snapshots and averages are collected, allowing you to view what was happening on the system at any instant in time or over a longer period. This also includes the ability on the same trend display to simultaneously review point values alongside system event information, alarms, operator changes and advisories. This enables you to quickly perform root cause analysis from a single display.

This historical data can be viewed in several ways, for example as graphical trends (such as line or bar charts), as lists of numeric values and as event information from the EBI event Historical data can also be used in reports, application programs and archived to off-line media for long term storage.

Included in each EBI system are 1000 standard trend displays, each able to support the display of historical data for up to thirty-two points, and each can also plot two sets of data against each other (X-Y plots). The historical period of interest and the use of auto scaling for all data samples ensure the Trend Displays quickly provide meaningful important data. Operators can zoom in on trends for closer inspection, and look forwards or backwards in time using a scroll bar or by directly entering the time of interest. Operators can even copy and paste trend data directly into Microsoft Excel.

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REPORTING

EBI provides comprehensive reporting facilities including a range of standard reports, the ability to create custom reports, the ability to export and import information and the ability to use other standard reporting systems with EBI. Some examples of reporting are as follows:

- All points in alarm over a configurable time period
- All activities by a certain operator
- All activities for a certain group of points
- All movements of cardholders through certain doors

- All movements through any doors by a specified cardholder
- All information pertaining to access configuration information
- All information about a group of cardholders
- How often a point has changed state
- How many times a cardholder has used a card
- All cardholders in a specific Location or Zone

EBI also provides ODBC (open database connectivity) access to its database from any ODBC-compliant tool.

Cardholder Data can also be either exported or imported from EBI, allowing integration to and from external systems in either ASCII, XML or direct from any ODBC compliant database.

All standard reports can be generated on demand from the reporting subsystem or from a custom display. Reports may be initiated directly from viewing alarms and events. Reports may also be generated periodically, such as once per day, or may be initiated by an event.



CARDHOLDER MANAGEMENT

EBI provides an easy-to-use cardholder management system with a database that supports a virtually unlimited number of cardholders. The EBI cardholder management database is a relational database designed for maximum flexibility. Cardholders have 94 user fields pre-configured to hold commonly required information such as employee number or location. However, you can change all of these user fields to match your own requirements. In addition, user fields can be added or removed to create your own cardholder database structure. The layout of cardholder information on displays in EBI can also be changed to reflect your set of user fields and your own design preferences. For example, some fields may be configured as free format text boxes whereas others may display a list of pre-configured choices.

Editing Cards and Cardholders

Multiple cards may be assigned to each cardholder to allow a flexible approach to dealing with situations such as lost cards, forgotten cards or the need to issue two cards to a cardholder.

Cards and cardholders are easily added to the system. Cards may be assigned to cardholders or remain as "unissued" cards. Whenever card or cardholder information is changed, the event management systems records the operator and the change made.

Multiple cardholders may be simultaneously edited at one time by using the "multi-select" capability. This is a very useful feature when you need to change some information which applies to many cardholders.

Templates make it easy to add a new cardholder to particular group. For example, a "Sales Cardholder" template might contain all the relevant information for the sales department. Operators then use this template when adding new sales staff to the cardholder database.

Searching for cardholders

It is easy to search for cardholders and cards. By entering the first couple of letters of the cardholder's name or any searchable field, an operator can call up all cardholders who match that search. The operator can even do searches on multiple fields at a time such as all cardholders in the sales department who are currently "active".

Similarly, operators can search for points, access levels, zones, time periods, operators and many other system components.

Photo Identification

EBI can be used to generate photo identification badges displaying a cardholder's image and/or signature. Images can be captured with various devices such as video cameras, digital cameras, signature tablets or scanners. These images are displayed on the cardholder detail display and can be printed on a photo identification card. EBI supports both the MCI and TWAIN standards for interfacing to image capture devices, and supports the WinTab standard for interfacing to signature capture pads.

Photo identification cards can be designed using HMIWeb graphical Display Builder, and printed on any Windows-supported card printer. EBI also supports the ability to add pictures, logos, magnetic stripe encoding and bar codes to photo identification cards. You can also use chroma key or image ghosting for extra security.

Biometric Support

EBI provides fully-integrated support for certain biometric access control devices. Other biometric devices such as fingerprint and retinal scan units that have an industry standard wiegand output to connect to an access control panel similar to a card reader are also supported.

Cardholder Import and Export

The EBI cardholder data can be updated from external systems such as the PeopleSoft Human Resources database or SAP Enterprise Management System. This removes any requirement for duplicate data entry and enables the access control system to be kept up-to-date with the HR system. Personnel data flows one way, from the HR system to the EBI database. Updates can be on a manual or a periodic basis.

In addition to this, it is also possible to send Time and Attendance data and cardholder details from EBI back to enterprise systems. This information can be used to calculate how long particular cardholders have been on site for occupational health and safety purposes or for payroll purposes.



ACCESS CONTROL

EBI provides comprehensive access control and security management which is easy to configure and manage.

Zones

To control access to your facility, you will need to group physical areas that have the same access requirements into "zones". Both entry to and exit from a zone can be controlled by an access card reader.

When a cardholder moves through the facility, the zone that he/she enters is displayed in EBI when an operator calls up the cardholder details. EBI can also provide a list of all cardholders in a particular zone and can enable anti-passback zones. EBI supports a single level of global anti-passback where a cardholder entering a site through an entry card reader cannot access this reader again without first exiting the site via an exit reader.

Time Periods

Time periods are used to specify the times when cardholders have access to certain zones. Each time period defines a group of days such as Monday through Friday, and an associated start and stop time range such as 8:00 AM to 5:00 PM. Only authorized users can change Time Periods, which are automatically saved and downloaded to relevant access controllers by EBI.

Access Rights

In order to specify access requirements, cardholders may be assigned up to sixty four access rights. Each

access right consists of Access Levels or Temaline Behavior Models. An Access Level is defined by a Time Period and Zone pairs that specify which parts of the facility cardholders are able to access at which times. For example, one access level may define access to the Car Park zone for 24 hours and the Office zone during business hours. Only authorized users can change Access Right assignments. Access Right changes are automatically saved and downloaded to relevant access controllers by EBI.

Access events are generated every time a cardholder uses an access card to attempt to get through a door. Access event entries include the date, time, door, and cardholder who attempted the access, and whether access was granted or denied. If access was denied, an associated message indicates the reason.

Elevator Control

EBI can control access to different floors of the building through elevator control. Elevators can be scheduled to provide general access during the day and restricted access after hours. When access is restricted, cardholders must be validated by using a card reader in the elevator prior to access being successfully granted. Floors and elevators can be linked to access control zones and access levels.



ASSET LOCATOR

Asset Locator provides the ability to immediately identify where key high-value assets are in the facility. By integrating the latest technology in IR and RF tagging, EBI can track your valuable assets as they move around the facility. All that is needed are the asset tags and a number of detectors that are easily installed into the ceiling of the building. An operator can find a piece of equipment by calling up a custom display that shows the layout of the building and the location of the asset. Cameras can also be triggered to follow the asset as it moves. If assets move out of the detector's view, then alarms can be generated to alert operators to lost assets. The tags also provide a duress function so, when worn by staff, provide additional security and peace of mind.

It is also possible to monitor a contact with an asset locator tag. By doing this, runtime hours of equipment items can be monitored.

ADVANCED SECURITY OPTION



EBI provides some extended functions for ensuring the safety of security staff.

Deadman Timer

The Deadman Timer option monitors operator activity at a Station. It provides a safeguard to ensure that an operator is actively at their post and that all alarms are acknowledged promptly. If there is no operator activity for a defined period, EBI automatically signs off the operator. A warning message will notify the operator before this happens. If that operator does not sign onto the system again, EBI automatically controls an output to alert help.

The Deadman Timer can also be used to check whether alarms have been acknowledged and will alert others if alarms are not being promptly attended to even if there is other system activity. In addition, the Deadman Timer can even generate dummy alarms to keep the operators busy.

The Deadman Timer allows you to feel confident that your operators are at their posts and performing their duties.

Guard Tour

EBI can track a guard through defined tours of a building or facility using a Guard Tour. Guard Tours can be programmed using any logical combination of card readers and input points as tour checkpoints. At each point along the tour, it is possible to switch cameras, disable alarms, or toggle lights.

For every tour checkpoint, the user specifies a time allowance for the guard to arrive at that location and points which are controlled when the guard arrives. For example, these points may be used to turn lights on or off.

If a guard reaches the next step in the tour too early or too late, a late arrival alarm is generated, door alarms are enabled, and digital input points are set to the secure mode.

The Guard Tour ensures that guards are monitored at each step on the tour and, should there be problems, the control Center is immediately notified.



VISITOR MANAGEMENT

Reception Management

Temaline Reception Manager provides an optional solution for managing visitors to facility and provides complete integration with the EBI Temaline access control system. The seamless integration is critical as it provides levels of security and visitor control that cannot be provided by stand-alone solutions.

In addition to capturing visitor data, the visitor management package also permits the issuing of visitor access cards and temporary staff cards while the powerful reporting capabilities help identify the location of visitors present in the building any given time.

Temporary and Visitor Cards

Temporary and Visitor cards are configured in the system and then physically stored in an archive kept by reception staff. The cards can then be issued and enabled on demand – either for a new visitor or an employee whose card has temporarily been misplaced.

Visitor Pre-registration

Visitor pre-registration helps speed up the visitor check-in process by allowing staff to enter details for their visitors prior to their arrival.

The reception has access to an on-line list of preregistered visitors and simply has to complete any outstanding details, issue a card (or print a pass) if needed and start the visit.

Visitor Check-in/Check-out

The reception desk manages all visitor check-in/out operations including:

- Record personal and identification data
- Use the address book to identify a contact person for the visit
- Record all data concerning the visit and, if appropriate, assign a card and associated access rights
- Print a visitor's pass on paper or card
- Suspend and continue a check-in operation to allow time to trace the desired contact person
- Terminate the visit if it is not possible to trace the desired contact person.
- Modify data associated with the current visit without terminating the visit itself (for example, extend the card expiry date, enter notes regarding the visit).

WEB Reception Management

The WEB Reception Management module improves the Reception Manager functionality by providing an Internet Explorer-based web browser connection to the Reception Manager database. The browser connection provides more stations, better performance and reduces engineering by eliminating the need for manual software installation.

The functionality includes:

- Customized Human Machine Interface
- Check-in and check-out of visitors
- Visitor pre-registration
- Temporary card assignment and return
- Cardholder present in zone report
- User status

EXTENDING THE SYSTEM

EBI provides a range of features and interfaces that
enable further enhancement by developing custom
applications or by sending EBI data to other
business systems. Such enhancements enable EBI to
meet the specific needs of your facility but with a
standard platform.

Server Scripting

Server scripting is the easiest way of extending the functionality of your system with minimal effort. It allows you to write simple scripts that perform additional functions when, for example, alarms occur, reports are generated and points return to normal. Scripts are created in an integrated script editor using Microsoft VBScript, a popular scripting language.

Network API

To extract simple point information from EBI for use in another application, it is possible to use the Network API to read and write point data. This API is easy to use even for the novice programmer.

Microsoft Excel Data Exchange

Microsoft Excel Data Exchange is used to link EBI and Microsoft Excel. A wizard in Microsoft Excel enables connection to the EBI server and to points. The values of these points can then be used in your Excel spreadsheets and be automatically updated.

Web Toolkit

The Web Toolkit provides all the information required to link EBI to your corporate intranet or the Internet. The toolkit allows users to develop Web pages which incorporate live EBI data.

Such Web pages can even give users control of EBI points. For example, they could provide tenants with information about temperatures in various parts of their building and allow them to change the temperature set points.

Applications Toolkit and User Scan Task Kit

EBI provides a suite of tools which enable you to create your own powerful applications on top of EBI's functionality. This can be used to meet the specific needs of the site and to create value adding further automation or integration with other business systems.



SYSTEM CONFIGURATION TOOLS

Quick Builder

EBI is configured using an extremely flexible and powerful engineering tool called Quick Builder.

Quick Builder allows both "novice" and "power users" to configure points, controllers, Stations, and printers.

Novice users will benefit from the intuitive interface and context-sensitive help, and can start their projects by modifying a sample database. Power users can take advantage of the many powerful features, such as filtering and multiple point editing. Quick Builder ensures systems are implemented quickly and easily with automated discover wizards available for many of the interfaces to identify controllers and points to add to the EBI database.

HMIWeb Display Builder

HMIWeb Display Builder is an object-based, fully integrated custom display builder for development of site-specific graphical floor plans in HTML, card layouts, faceplates and alarm handling procedures.

It is easy to create displays with simple point and click operations. For example, to create a button that calls another display, you simply click on the button icon, draw the required size button, doubleclick on it, and enter the target page.

Static objects include text, rectangles, arcs, and circles. Dynamic objects include text, buttons, indicators, charts, check boxes, combo boxes, and scrollbars. It is easy to link dynamic objects to the database by double-clicking and choosing the point ID from a list box, allowing the display to show the doors, temperature sensors and cameras in the facility.

HMIWeb Display Builder allows incorporation of live video elements at any size, using the live video tool. This enables you to complement your custom displays with live video data where an operator can actually see what is happening at the time.

EBI provides a library of common symbols and indicators used in building management systems, enabling you to achieve a consistent look and feel. EBI also allows you to embed ActiveX controls and ActiveX documents in displays.

Advanced users may add their own scripts to displays to animate them. HMIWeb Display Builder provides a VBScript editor and an object model for all display elements. Some examples of what can be done include:

- Animating fans and other equipment to show real actions
- Changing colors in response to system temperatures
- Validating data entry from operators
- Alerting operators to special conditions with messages

HMIWeb Display Builder saves displays in HTML format which, if required, can be edited by some other HTML editors.

PRODUCT DATA SUMMARY

System Architecture

Client/server architecture

Microsoft Windows XP Professional or Microsoft Windows 2003 Server

Native 32-bit application

Scalable-single server to distributed server systems

Real-time database

Microsoft SQL Server 2005

SQL Reporting Services

Points: Analog, digital, totalizer, access, flexible and container

Architectures

Single server Redundant hot standby server Distributed System Architecture

Networking

Uses industry-standard TCP/IP networking over Ethernet

Flexible station licensing based on the number of simultaneous connections

Controllers may be connected via Ethernet

Remote connections via WAN

Open Systems Support

HTML graphics

LonWorks - LonMark standard (ANSI/CEA 709.1)& LNS 3.2

BACnet - ASHRAE BACnet standard (SSPC 135-2004) B-OWS Profile

OPC - OLE for Process Control

- OPC Data Access 2.0
- OPC Alarm and Event 1.02

Modbus, Modbus RTU, Modbus TCP

ODBC database access

XML interface via SQL Reporting services

Operator Interface

Microsoft Windows XP Professional or Microsoft Windows 2003 Server. Microsoft Vista supported with EBI R400 Service Pack 1

Internet Explorer 7.0

Use Station Client software or Internet Explorer Browser

- Over 300 preconfigured standard displays
- 1000 Standard Trends
- User configurable object-based custom displays
- Designed for display resolution of 1280 x 1024 or higher
- Embed live video
- Embed SafeBrowse[™] for secure Internet/intranet integration
- ActiveX animation using VB Scripts
- ActiveX document integration
- Launch Windows applications directly from displays
- Easy point and cardholder search with wildcard support
- Cut, copy, and paste facilities for easy editing of text
- User input devices include keyboard, mouse, trackball (optional), touchscreen (optional)
- Support for 21 CFR Part 11 electronic signatures
- Using Windows Terminal Services support for up to 5 mobile Stations on PDAs

Operator Security

Six levels of access to system functions:

- View Only
- Acknowledge Only
- Operator
- Engineer
- Supervisor

Manager

Up to 255 control levels for operator-initiated actions Automatic idle time logout

- Prompt for periodic change of passwords
- Events logged by operator ID or full operator name
- Individual operator profiles including Scope of Responsibility (SOR)
- Effective data partitioning of facility into different locations
- Command assignment to control different output states
- Operator sign-on can be restricted to certain Stations and certain times
- Automatic change of Scope of Responsibility by time
- Use Windows operator accounts for authentication in EBI

Real-time Database

Connects to HVAC, security, access control, industrial process control, fire detectors, energy meters, analog CCTV, and digital CCTV controllers

- Database partitioning into a hierarchy of locations (up to 10 levels deep)
- Point groups

Event-initiated programs include:

- Arithmetic calculations
- Logic calculations
- Composite hierarchical point alarming
- Report, task or display request activated by access card or status change
- Group point control
- Location or group alarm inhibit

Alarm Management

Configurable color-coded alarm summary display page with filtering by alarm priorities and area

 2000 concurrent alarms in alarm list, each with a count available for number of times occurred since last acknowledgement

- Four levels of alarm priority with fifteen sub-priorities
- Sort and filter alarms, add comments to alarms
- Alarm segregation through database partitioning
- Location tree summary of alarms
- Alarm parameters can be adjusted on-line
- Dedicated alarm zone displays most recent highest priority alarm
- All alarm and return-to-normal conditions logged in event summary
- Individual or page acknowledgment of alarms
- Automatic link to optional alarm instruction page or associated display page or digital video clip
- Alarm handling responses logged into event summary
- Additional messages can be attached to an alarm
- Alarm acknowledge (writes through to controller)
- Individual alarm prioritization of different input states for the same point
- Single line alarm processing (recurring individual alarms can be displayed as a single alarm with a count)
- · Alarms and events can trigger reports
- Alarm annunciation can use custom sound files (*.wav)
- Automatic alarm priority elevation if alarm unactioned

Analog point alarm types include:

- PV High
- PV Low
- PV High High
- PV Low Low
- Deviation High
- Rate of Change
- Transmitter High
- Transmitter Low

Alarm Pager

- Transmits alarms to pagers using PET, TAP or UCP protocols. This enables SMS alerts to be sent to Mobile Phones.
- Transmits alarms to email using SMTP
- Transmits alarms to SNMP managers as SNMP traps.

ENTERPRISE BUILDINGS INTEGRATOR (R400)

Events

System events created for all:

- Operator changes
- Point state changes
- Alarms
- Alarm acknowledgment
- Manual controls
- Cardholder changes
- And for many other system activities
 Event file limited only by disk space available
 Simple archiving of events to off-line storage media
 Simple retrieval of off-line events for reporting

Historization

Virtually unlimited historical record of both live and derived data can be stored.

Intervals include:

- 1, 2 or 5 second snapshots
- 1 hour snapshot
- 8 hour snapshot
- 24 hour snapshot
- 6 minute average
- 1 hour average
- 8 hour average
- 24 hour average

Collection is configured per point

Composite point parameters can all be historized Archive to off-line local or network attached storage

Trends

Multiple formats include:

- 1000 trend displays
- Multi Line (points and events)
- Multi-Line (trend with events)
- Single (bar graph)
- X Y Plot (point plot)
- Numeric (tabular)

- On-line change of trend type Up to thirty-two parameters on one trend Configurable sample densities Configurable sample periods Time of interest entry
- Individual pen enable/disable
- Hairline cursor readout

Rubber band zoom

Copy and paste trend data to Microsoft Excel

Embed trends in custom displays

Underwriters Laboratory Listing

EBI R310 was UL listed to the following standards. EBI R400 is being tested for compliance which will be announced in product bulletin when complete.

- ALVY-UL294-Access Control
- AMCX-UL1610-Central Station
- APOU-UL1017-Security Systems
- APOU-UL1076-Security Systems
- PAZX-UL916-Energy Management Systems
- QVAX-UL864-Critical&NonCritical Process Control
- UDTZ-UL2017-Signaling Systems
- UOXX-UL864 Accessory Fire
- UOJZ-UL864-Panels Fire
- UUKL-UL864-Smoke Control

Reports

Periodic, demandable, or event driven reports ODBC access for custom reports Custom reports via SQL Reporting Services

ENTERPRISE BUILDINGS INTEGRATOR (R400)

Report	Description
SQL 2005	Microsoft SQL Server Reporting
Reporting	Services delivery of simple custom
Services	report interface with EBI. Allowing
	graphic interface for reporting
	cardholder, system event, point
	history and real time point
	information
Access	Lists all access levels matching a
Level	specified search criteria and the
	zones, Time periods.
After Hours	Lists all points changing state
	matching a certain search criteria
	occurring over a specified range of
	time.
Alarm/Event	Lists all alarms or events matching a
	certain search criteria occurring over
	a range of time.
All points	Lists all points which match a
	specified search criteria.
Cardholder	Lists all information for cardholders
(visitor) Detail	who correspond to a specified
	search criteria.
Cardholder	Lists card details for cards
(visitor) List	corresponding to specified search
	criteria based on any cardholder
	field.
Card Usage	Shows the total number of access
	movements (including no
	movements) for cardholders over a
	given period of time.
Cardholder	Lists all cardholders who have access
Zone	to the specified zones.
Door History	Lists all cardholders that accessed
	any specified door or group
	occurring over a specified range of
	time.
Generic	This report can execute any custom
Crystal	designed report using the Crystal
	Reports tool.
Group Card	Lists all doors accessed by an
Trail	individual or group of cardholders
	during a specific range of time.
Microsoft	Runs a Microsoft Excel spreadsheet.
Excel	
Occupancy	Lists cardholders in specified zones

	at that time.	
Point Attribute	Lists all points specified by the	
	following attributes: Out of service,	
	Alarm suppressed, Abnormal input	
	levels, In Manual mode and	
	Nominated state.	
Point State	Lists all information about Time	
Changes	Periods matching a specified search	
	criteria.	
Time Period	Lists all information about Time	
	Periods matching a specified search	
	criteria.	
Zone	Lists all information about Zones	
Information	matching a specified search criteria.	

Cardholders

All cardholders may have the following:

- Cardholder first name and last name
- 94 configurable user fields delivered (easily customized or expanded)
- Organization
- Address
- Comments
- Alarm priority
- Cardholder State (Active, inactive, Left Company)
- Card trace option
- 64 access levels per cardholder as standard
- Last door accessed
- Cardholder commencement date
- Cardholder expiration date
- Lighting control zone
- High resolution color image of cardholder
- Cardholder signature

Cardholders may be assigned one or many cards. Each card has the following information:

- Card number
- Card technology type
- Card credential type
- Card state (active, inactive, lost, stolen, expired)
- Card commencement date

- Card expiration date
- Personal Identification Number or (PIN)
- Long access (controller-specific)
- Escort required (controller-specific)
- Escort capable (controller-specific)
- Cost override (controller-specific)
- Event lockout override (controller-specific)
- Card Class A, B (controller-specific)

Support for over 100,000 cardholders Fully customizable user-defined database fields Comboboxes to preprogram cardholder field choices

Card and cardholder commencement and expiration dates

Up to 64 access levels per cardholder Automatic trace of cardholder through the facility Card pending expiration notification Multi-select and multi-edit of cardholder Visitor and employee cardholder types supported Templates for cardholder management Powerful searching and sorting of cardholders

Photo Identification

MCI or TWAIN interface for image capture Wintab interface for signature capture Configurable card layouts and image size Easy search and navigation facilities Batch printing of cards Bar code Magnetic stripe encoding Chromakey and ghosting

Access Control

1024 access levels containing 256 zone/time period pairs
1024 card reader zones each containing 128 doors
256 time periods
Complete or modified data download to controllers
ASCII import/ export of all access components

Support for one level of global perimeter anti-passback, with nested anti-passback available with Temaline access control solution

Application Development

Network API: allows simple network connected programs to read and write point data

Microsoft Excel Data Exchange: Wizard for getting point and history data into Microsoft Excel from EBI

Web Toolkit: allows point data to be incorporated onto web pages

API: general purpose application development interface

Cardholder Services: specific API interface for accessing cardholder data. This is planned to be available with Service Pack 2 of R400.

User Scan Task Kit: allows development of loosely integrated controller interfaces

Quick Builder

Graphical engineering tool Preconfigured typical system databases Easy creation of point, hardware, Stations and printers Hierarchical system modeling Multipoint edit User defined fields Import/export facility

HMIWeb Display Builder

Object-based display building package with dynamic display objects such as:

- Shapes
- Live Video
- Alphanumerics
- Checkboxes
- Card Image
- Comboboxes
- Pushbuttons
- Charts

Many standard drawing features including:

• Tool Palette

- Color palette
- Alignment
- Group/Ungroup
- Snap to grid
- Zooming
- Resizing objects
- Horizontal and vertical spacing
- Library of commonly used symbols
- Remote engineering support

Printed Documentation

- Installation Guide
- Overview Guide
- Operators Guide
- Configuration and Administration Guide
- Building Management Guide
- Temaline Access Control Config Guide
- Security Electronics Access Control Cnfg Gd
- FS90 Access Control Configuration Guide
- PCSC Access Control Configuration Guide

Internationalization

Support for operator interface in localized languages

CONTROLLER SUPPORT

Access Controllers:

- Honeywell Temaline
- Honeywell NexSentry (Security Electronics) 800 series, 4100 series controllers, Star I and Star II controllers
- Honeywell FS90 AMC
- PCSC MicroLPM, MicroALM, and MicroELV, IQ and Ultimate access control panels
- Biometric Devices, RSI Handkey II (with Service Pack 2 of EBI R400), ID3D with integrated template manager
- ePADink Signature Pad from Interlink Electronics

Analog CCTV Controllers:

Camera and monitor switching on alarm

For selected switchers, camera selection, and automatic PTZ control from operator display or keyboard

- Honeywell Maxpro
- Honeywell / Ademco VideoBloX
- Pacom/Pelco

Digital Video Systems:

- Honeywell Digital Video Manager R300
- Honeywell Digital Video Manager R200

Industrial Process Control

- Experion PKS R300 via DSA
- Experion PKS R200 via DSA

Security Controllers:

- Honeywell SMP or HSM
- Tecom Challenger
- Honeywell 19000
- Honeywell FS90 Plus
- Galaxy

Life Safety Controllers:

- Honeywell XLS1000
- Honeywell XLS2000
- Honeywell XLS3000
- Honeywell FS90 Plus
- Honeywell XLS80e
- Honeywell XLS140
- Honeywell XLS200

Building Management Controllers:

- Honeywell EXCEL 5000 OPEN suite of controllers
- BACnet compatible controllers
- Honeywell JACE V (not available in all regions)
- Honeywell ComfortPoint (not available in all regions)
- Honeywell and third-party LonMark Controllers
- Honeywell R7044
- Honeywell Delta 1000/2000 (via XBSi)
- Honeywell Excel Classic

- Honeywell IRC
- Honeywell Excel EMC

PLCs:

- Honeywell UMC 800, HC900
- Modbus, Modbus Plus, Modbus RTV, Modbus TCP
- Honeywell LCS620 PLCs
- Allen Bradley PLC2, PLC5 SLC5/03 PLCs

SOFTWARE OPTIONS

Asset Locator

Integrated Maintenance Manager

Deadman Timer

SAP Integration (available with R310, planned with Service Pack 2 for EBI R400)

Alarm Pager

Group Control

Guard Tour

- **UL Listing Compliance**
- Pharmaceutical Compliance Restrictions
- Web Toolkit
- User Scan Task and Applications Toolkit
- Microsoft Excel Data Exchange

Network API

- Integrated Photo ID
- **Communications Encryption**

PRODUCT SPECIFICATIONS

Server Platform

- Processor: 3.0 GHz Pentium[™] 4 processor or higher
- Memory: Minimum of 2 GB RAM
- Keyboard: with 12 function keys
- Display Resolution: 1280 x 1024 x 65K colors
- DVDROM Drive
- Network Protocols: TCP/IP
- Pointing Device: Mouse
- Hard Disk: 40 GB drive (NTFS)

- Operating system: Windows XP Professional SP2 and SP3. Windows 2003 Server SP2
- Browser: Internet Explorer 7.0

Operator Station (Client) Platform

- Processor: 3.0 GHz Pentium[™] 4 processor or higher
- Memory: 1 GB minimum
- Display Resolution: 1280 x 1024 x 65K colors
- Hard Disk: 20 GB drive (NTFS)
- Keyboard: 12 function keys
- Pointing Device: Mouse
- Operating systems: Windows XP Professional SP2,or SP3. Windows 2003 Server SP2, Windows Vista with EBI R400 Service Pack 1
- Network Protocol: TCP/IP
- Browser: Internet Explorer 7.0

Database Sizing:

The EBI base package includes licensing for 250 points and 12 readers.

Additional licensing for points can be purchased in quantities of the following packages to a maximum of 65,000 points per single EBI Server:

- 250 point adder
- 2,500 point adder
- 20,000 point adder

Additional licensing for readers can be purchased in quantities of the following packages to a maximum of 2,000 readers:

- 6 reader adder
- 50 reader adder
- 400 reader adder

Other Database parameters include the following.

Items	Maximum Number per single EBI server
Cards	Greater than 100,000 subject to hardware limitations
Points	65,000 per server 180,000* per system

	* More than 180,000 with Technical
	Risk Review and Approval
Δετορε	64
Access	04
Levels	
Zones	1024
Time Periods	256
Alarms	2000 concurrent
Operator	Licensed individually up to 40*
Stations	*80 stations will be supported with EBI
	R400 Service Pack 1
Printers	50
Channels	90
Reports	1000
Events	100000 per 60 MB of disk space
	available
Assignable	1000
Locations	
Users	1000
Number of	10*
DSA	
connected	* More than 10 with Technical Risk
Servers	review and approval

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