ESI Presence Management

A multi-device RFID presence application for ESI communications systems

Unique, affordable presence management

ESI Presence Management is a hardware/software solution combining RF scanning technology and ESI's communications systems. ESI Presence Management offers presence indication, optional live video monitoring, personal call routing, access control, and documented tracking of users' work hours and attendance history.

ESI Presence Management is offered as a simple doorphone solution for addressing basic entry and exit applications, and as an advanced supervisory solution utilizing RFID technology to provide access control and personnel location elements.

As a **basic doorphone**, ESI Presence Management employs the ESI Presence Management RFID Reader connected to any station port (digital or IP[1]) within a compatible ESI system, to control communication between the RFID Reader and programmed stations within the system via the integrated **CALL** key. When the **CALL** key is pressed, one or more stations or a predefined department can be set to ring. When a ringing station answers the "doorphone" call, normal two-way conversation is initiated. The ESI Presence Management RFID Reader includes relays to which a door strike lock mechanism can be connected. In this way, any station with an *UNLOCK* key programmed can press this key to energize the relay and remotely open the door to which the station is connected. If a door remains open, the RFID Reader (when connected to a sensor on the door) will notify a predefined station of a "door-ajar alarm" status.[2]

When the integrated RFID technology of ESI Presence Management is used, a set of **advanced RFID applications** is available:

- **Access control** can be implemented to restrict access to certain entries or secured areas within the facility to those possessing a validated **electronic key**. While each person able to enter the building may be validated for the entrance doors of the building, it is possible to program specific electronic keys to allow access to secured zones or sections *within* the building itself.

A comprehensive suite of ESI Presence Management benefits is gained through the use of the integrated RFID technology.

- A **presence indication** shows the "in" or "out" status of employees as they scan through doorways controlled by an ESI Presence Management RFID Reader. Any station displaying a DSS key for another station will reflect the "in" or "out" status by way of a distinctly illuminated amber lamp.

- Unique to ESI's system, **Personal Call Routing** performs immediate and automatic control of station functions for the scanning user, such as call forwarding, greeting selection, and message notification choices. This saves the scanning employee time and eliminates the problem of "forgetting" to modify his status. Perhaps most importantly, Personal Call Routing spares staff and management, as well as incoming callers, the frustration of ringing an unattended station.

The ESI Presence Management RFID Reader enables enterprises to do more than merely track the comings and goings of employees. With the addition of the optional third-party *WaspTime*[3] PC software, movement of employees scanning in and out of the building or secured areas is documented in an electronic file that can easily be imported into common payroll software applications, such as *QuickBooks*® and services provided by ADP®. The end of paper time cards, manual clocking, and time-consuming payroll preparation introduces an all new level of automation at a very reasonable cost to organizations that previously considered this technology to be out of their reach.

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[1] IP version of RFID Reader requires ESI Communications Server (running appropriate system software) or IP Server 900.
[2] Door-ajar alarm only on IP version of RFID Reader.
[3] Not sold by ESI; available for direct purchase from the manufacturer, Wasp Barcode Technologies (*www.waspbarcode.com*).

Features at a glance

- **Doorphone operation** — ESI Presence Management supports basic two-way doorphone operation. The integrated doorphone operation includes electric strike-type lock control, two-way audio connection, **CALL** button, and large backlit two-line display. ESI Presence Management RFID Reader doorphones may be mounted inside or on the exterior of a building (see "ESI Presence Management RFID Reader specifications," page 13).

- **Remote entry control** — Where an ESI Presence Management RFID Reader is installed, a call can be made to a station, department, or Esi-Link location by pressing the **CALL** button. If a user answers that call, the user can then use the **remote door unlock feature key** to unlock the associated door. The user must be on an active call with the doorphone when using the remote door lock control feature. The **CALL** button destination can be different for day and night modes.

  > **Note:** Only ESI desktop phones or *ESI Video Viewer*[1] software can be used to unlock the door remotely.

- **Access control** — Issued building keys can be easily replaced with ESI Presence Management RFID Readers by distributing assigned electronic keys to all authorized employees. These devices can be of the "scan card" type or a key ring fob. Scanning of the electronic key activates the strike lock of the door, permitting access to authorized personnel. Use of ESI Presence Management RFID Readers reduces incidents of weather-related corrosion of key contacts and security breaches caused by employees' codes inadvertently becoming known to non-authorized persons.

- **Access scheduling** — Access is controlled by the recognition of programmed RFID electronic key devices. Each electronic key is programmed to be recognized by one or more ESI Presence Management RFID Readers, in any combination. Additionally, individual tag devices may be programmed to allow access only on specific days or between specified times. Up to seven schedules are maintained for each tag device.

- **Presence indication** — ESI Presence Management hardware and ESI software combine to create a powerful personnel-tracking solution. The integration between the ESI system and ESI Presence Management allows station status to be modified by simply entering or leaving the building. This feature provides a powerful advantage to managers and co-workers alike, who must be aware of employees' presence. Users with a DSS appearance of an extension on their stations[2] can track that person's status at a glance. Distinctive lamp indications for In- or Out-of-Building are all triggered by scanning in or out of ESI Presence Management. Historical records of employees' presence in the building and hours worked may be added with the optional *WaspTime*[3] PC software.

- **Remote-site support** — ESI Presence Management hardware is available in an IP version[4] which can operate over a wide-area network (WAN) for remote-site applications. Users can monitor, control, and provide scheduled access at remote sites in addition to their own building. The IP version also can be utilized on a local area network (LAN) where preexisting Ethernet cabling is in place or where pulling telephone cabling is impractical.

- **Video monitoring support** — When paired with ESI Presence Management on a properly equipped IP Server 900 or ESI Communications Server, *ESI Video Viewer* software can provide live video monitoring of an organization's facility. Simply add an ESI Video Adapter or a compatible camera and download the Basic version of *ESI Video Viewer* to enhance remote entry control. The optional Advanced version of *ESI Video Viewer* adds a number of other capabilities, including customizable multi-camera viewing and color-coded motion detection indications, that greatly enhance the user's video monitoring experience.

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[1] Requires ESI Communications Server (running appropriate system software) or IP Server 900. For more information, see the *ESI Media Management Product Overview* (ESI # 0450-1238).

[2] Or in any of ESI's *VIP 7* applications. For more information on *VIP 7*, see the *VIP 7 Product Overview* (ESI document # 0450-1340), available from *www.esi-estech.com/Resellers* (password required).

[3] Not sold by ESI; available for direct purchase from the manufacturer, Wasp Barcode Technologies (*www.waspbarcode.com*).

[4] IP version of RFID Reader requires ESI Communications Server (running appropriate system software) or IP Server 900.

- **Personal Call Routing**™ — Unique to ESI, this operation performs immediate and automatic control of station functions for the scanning user. Programming of the station associated with the scanned electronic key reflects the user's call handling choices based on presence in or absence from the building. Choice of Intelligent Call Forwarding™ destinations, off-premises "reach-me," call routing methods, mailbox greetings, message notification options, and quiet time programming can all be automatically altered when leaving the building. (The following four options can be set using either the phone or one of ESI's *VIP 7* applications.[1])

  – **Call forwarding destination** selection can be controlled simply by scanning out when exiting the building. Calls can be immediately routed to voice mail instead of ringing the station several times, saving callers' time and eliminating unnecessary office noise. Alternately, an external number, such as a cell phone number, may be defined as the "absence destination" so that calls follow the station user wherever he goes.

  – **Mailbox greeting selection** lets users define different outgoing greetings on their mailboxes for when they are in or out of the office. This lets callers have a better understanding of the user's availability, encouraging the leaving of messages instead of blind hang-ups. It saves the mailbox user the time and aggravation of manually switching between outgoing greetings.

  – **Message notification options** include dialing a pager, calling an external number or another station number, or taking no action at all. Additional parameters include the amount of time the ESI system will delay before making the notification, the number of attempts made to notify, and the amount of time between attempts. When a user scans out, his choice of all parameters can be modified to accommodate his absence. When he scans in again, his normal selections are reinstated. This automatic modification to message notification ensures that important messages won't go unattended for hours or overnight. This increases all mailbox users' productivity.

  – **Quiet time** is the period during which a mailbox user wishes to suspend message notification and the off-premises "reach-me" callout feature. Perhaps this time period begins at the close of the business day, but is enabled 10:00 AM to 3:00 PM on weekends. The mailbox user may function in a tech support capacity, so when leaving the building, he must continue to be notified of calls and messages until 11:00 nightly. The time limits established for enabling and disabling "quiet time" are automatically controlled by scanning in or out of the building. This eliminates the need for a user to access his mailbox to switch notification on or off prior to leaving for the night.

- **Time and attendance management** — With the addition of the optional *WaspTime*[2] software package, ESI Presence Management can document employees' time records based on when they scan in and out of the building. Integration among the ESI system, ESI Presence Management, and *WaspTime* simplifies timesheet preparation and payroll functions. An Ethernet® connection is provided to the customer's LAN via ESI's NSP[3], which passes RFID scanning activity to the customer's workstation PC running the time and attendance software application. The host PC is not required to be a dedicated unit, nor does it need to be a server. *WaspTime* formats the attendance history of each scanned employee in a way that is easily imported into many payroll software packages, such as *ADP* and *QuickBooks*. Many companies that believe such an automated payroll application is out of their reach financially or too sophisticated for their company find that this option saves countless hours in payroll preparation, error correction, and employee negotiation over time worked and absences.

- **Access to records** — When ESI Presence Management is paired with ESI Media Management, all access event records are captured and stored on the ESI system. The ESI Media Management system administrator can review the details of individual records and also export records to .CSV format for use in a spreadsheet or database. For details on ESI Media Management (including requirements for system, hardware, and software), please see the *ESI Media Management Product Overview* (ESI # 0450-1238).

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[1] For more information on *VIP 7*, see the *VIP 7 Product Overview* (ESI document # 0450-1340), available from *www.esi-estech.com/Resellers* (password required).

[2] Not sold by ESI; available for direct purchase from the manufacturer, Wasp Barcode Technologies (*www.waspbarcode.com*).

[3] Network Services Processor. The NSP is required only for installations that include a time and attendance integration. Each IP Server 900 and ESI Communications Server (as well as the legacy IVX X-Class system) includes NSP, standard; and, if any other ESI system is configured for ESI's *VIP 7* applications, the NSP is already installed in the system.

Applications

The countless enterprise uses for ESI Presence Management are limited only by the imagination of ESI Resellers and their customers. Here are a few highlighted scenarios that emphasize the flexibility of ESI Presence Management.

Doorphone uses

1. A business lacks a receptionist sitting in a lobby area to greet guests and vendors. An ESI Presence Management RFID Reader is mounted in the lobby. Visitors to the building signal their arrival by pressing the ESI Presence Management RFID Reader's **CALL** key. The RFID Reader is set to ring a selection of telephones. When they ring, any station with the ring appearance of the RFID Reader can answer the doorphone call and speak with the visitor. Moreover, selected users of *ESI Video Viewer* software can see the visitor if a connected camera is near the RFID Reader.[1]

Advantages:

- If a company's policy is to greet visitors personally and escort them into the building, the person expecting the visitor can be called by the user answering the doorphone and notified that the visitor is waiting in the lobby.
- Security is maintained by disabling strangers' access to the interior areas of the building.

Typical users include companies that use auto attendant exclusively (no receptionist), those that receive repeat visits from the same vendors, those whose primary business is not dependent on walk-in trade, and businesses that do not have a line-of-sight view of the front reception area.

2. A service company has a fleet of vehicles. For security, the service bays are kept locked at all times. An ESI Presence Management RFID Reader is mounted at the back door and a video camera is installed to monitor the area. The service technician "buzzes" the office inside the building by pressing the **CALL** key on the RFID Reader. When the receptionist or one of the office staff answers the call from the Reader, the technician is identified, through the use of *ESI Video Viewer* software, and provided access.

Advantages:

- The technicians must announce themselves; they are not free to roam in and out as they please. This helps minimize inventory shrinkage.
- Warehouse personnel do not need to stop their current tasks to respond to technicians at the back door. They are only disrupted when the technician needs an item under their control.

Typical users include all companies who have a warehouse entrance, those who receive multiple shipments throughout the day from various carriers, and businesses whose warehouse entries are not visible from anywhere within the building.

3. A business has a warehouse located a few blocks from the main building. Each key access point in the warehouse has an ESI Presence Management IP RFID Reader, accessed remotely from an IP-enabled ESI Communications Server or IP Server 900 in the main building.[2]

Advantages:

- The same capabilities allowed by the installation of ESI Presence Management RFID Readers are magnified by the convenient advantages of IP communications.
- Cabling an IP RFID Reader can be significantly simpler and more practical than for a digital RFID Reader, reducing time needed to install and, if necessary, repair or replace the device.

Typical users include companies that divide their operations among multiple buildings (particularly if those buildings are substantially separated) and any entity which prefers to add and maintain communications devices through IP.

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[1] *ESI Video Viewer* use requires ESI Communications Server (running appropriate system software) or IP Server 900. For more information, see the *ESI Media Management Product Overview* (ESI # 0450-1238)

[2] IP version of RFID Reader requires ESI Communications Server (running appropriate system software) or IP Server 900.

Remote entry control use

A doctor's office has a waiting room with a sliding glass panel through which arriving patients sign in. For security and privacy reasons, there is a need to prevent someone from reaching through the glass panel to open the locked door leading to the exam rooms. The physical distance between the door and glass panel is more than an arm's length, or there is another obstruction preventing a clear path, such as a sign-out or payment area.

When it is a patient's turn to be seen by the doctor, the receptionist opens her glass panel and calls the patient's name. The patient moves to the locked door. The receptionist presses a DSS key to which the RFID Reader's extension has been assigned, and then presses a preprogrammed *UNLOCK* key. Upon hearing the buzz or click of the strike lock, the patient may enter the office area.

Advantages:

• The receptionist does not have to get up and move around a counter to let the patient in.

• Privacy of those patients already in the exam room area is maintained by physically blocking others' view with the door.

• The exam rooms are kept secure from intrusive patients or distraught family members of patients.

• The receptionist receives notification if a locked door remains open, and can act to prevent unauthorized entry.[1]

Typical users include doctors, diagnostic labs, law firms, accounting firms, loan centers, blood banks, and any other enterprises that must protect the privacy and security of their inner office areas.

Access control uses

1. A business maintains a separate entrance for employees. Each employee is issued an electronic key when hired. An ESI Presence Management RFID Reader is mounted along side the entrance door outside the building as well as on the inside of the building. The door is fitted with an electric strike lock.

To enter the building, employees scan their company-issued electronic key, which releases the strike mechanism so the door can be opened. When leaving for lunch, appointments, or at the end of the workday, employees once again scan their electronic key.

Advantages:

• No keys must be retrieved when employees leave the company. Simply disable the departing employee's key code within the ESI Presence Management programming, so that the electronic key is no longer valid.

• Locks don't need to be re-keyed if keys are lost.

• If an electronic key is lost, it is easy to replace. Spare keys can be purchased at the time of installation, so a spare key is simply issued to the employee.

Typical users include all types of business, particularly those in industrial areas, those with large numbers of employees, and those with multiple entryways.

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[1] Door-ajar alarm only on IP version of RFID Reader.

2. In many businesses, a room such as a supply closet or computer room is kept under lock and key. Perhaps it's a controlled substance room in a medical office or clinic. In general, this is a section within a business that is not available to all employees.

An electric door strike is installed on this door in the place of a normal lock and key. The RFID Reader's built-in relay operates the strike when the preprogrammed *UNLOCK* key is pressed. When electronic keys are distributed among employees, only the electronic keys of those employees with approved access to the secured area are recognized by the RFID reader installed on this door. When an authorized employee scans this RFID Reader, the display shows *"WELCOME"* and the user's name. If an unauthorized employee attempts to scan the Reader, the display shows, *"ACCESS DENIED."* An employee's electronic key may be approved to operate a strike lock on the employees' entrance door, but not approved for accessing secured areas.

An additional wrinkle is possible with the use of a remotely located IP RFID Reader, allowing this same unlocking function remotely via an IP communications link.[1]

Advantages:

- Separate keys do not have to be issued for each door or area, saving cost and the headache of keeping track of which employee has which key.
- An employee with access to all areas in the building needs only one key to open all doors, like a master key.
- When a key is lost or stolen, the locks do not need to be re-keyed. Simply de-program the lost key so that it no longer is valid.
- Any electronic key can be programmed for access to one door, all doors, or any combination of doors.
- By keeping office supplies under lock and "key," there is far less pilfering by employees.

Typical users include doctors with pharmaceutical sample closets, and businesses with restricted computer rooms, data rooms, or supply closets, and businesses with limited office area such as restaurants, grocery stores, convenience markets, or daycare centers.

3. Enterprises like assisted living facilities or nursing homes run second and third shifts, but may not always have someone at the front desk. The interior of the building may be locked against unwanted intruders. The non-day shifts must periodically leave the building for lunch breaks, to run errands, or to just get fresh air. It is inconvenient to have to disrupt someone else to regain access to the building.

By installing an ESI Presence Management RFID Reader at the entry to the residents' rooms or patients' wards, a matrix can be established that grants access to only those workers who are assigned to those areas. This restricts random non-authorized personnel roaming, like housekeeping or the janitorial staff. Family members are required to announce themselves before entering during non-visiting hours.

Advantages:

- Employees have more freedom in and out of their assigned areas without disrupting others.
- Security is maintained by allowing only those with legitimate business to enter.
- Access is controlled for temporary and non-authorized personnel by granting admittance to only the authorized.

Typical users include nursing homes, assisted living facilities, school dormitories, childcare facilities, commercial bakeries, bottlers, food preparation businesses, and any industry with multiple shifts.

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[1] IP version of RFID Reader requires ESI Communications Server (running appropriate system software) or IP Server 900.

Presence indication/Personal Call Routing uses

1. ESI Presence Management allows supervisors to visually determine the in-office availability of their personnel. Customer service is enhanced, managers are better informed, and productivity is improved. A call center with limited representatives benefits enormously from a manager's awareness of short-staffed situations.

When a representative leaves the building, the DSS key programmed onto the manager's telephone indicates the absence of the employee by a distinct amber lamp indication. If call volume suddenly spikes, the manager can ask other employees to fill in. The Presence Status indication of the DSS keys make it apparent when too many reps are off the phones at the same time.

Advantages:

- Customer service and employee productivity can be better managed when a supervisor can monitor each employee's presence, in or out of the building.
- Proactive response by the manager ensures that customer calls are answered at a level in keeping with company requirements.
- The manager can save time by not looking around the building for an employee that has left.

Typical users include any formal or informal call center, order department, support desk function, or customer assistance group. This may also apply to enterprises that have multiple attendants at the front desk, employees who are not readily visible (like warehouse personnel), and regular departments that have a structured call coverage plan between employees of similar job functions, like legal secretaries and real estate agents.

2. Automobile dealerships are a prime candidate for the presence status benefits of ESI Presence Management. Sales staffers move in and out of the building to greet and assist potential customers. This type of movement doesn't indicate that the salesperson is gone, but only that he or she is working with customers. When a call comes in for the salesperson, the receptionist must know if a salesperson has left so the call can be handled professionally.

At many auto dealerships, the competition is fierce. Salespeople need to be "on the clock" even when not working. When a customer calls back to ask questions or make an offer on a car, the salesperson wants to receive that call. Upon leaving for the day, the salesperson scans out. The mailbox has been pre-programmed to automatically transfer all calls to his cell phone. The salesperson is able to view the Caller ID of the transferred caller before he answers. If he recognizes the number, he will answer the call. If he does not know the number, he may choose to let the call return to his mailbox.

Advantages:

- No calls go unanswered day or night, unless the user doesn't want the call.
- An excellent impression is given to the outside caller.
- The receptionist can respond more professionally when fully informed.
- A salesperson will not risk having his potential customer assisted by another salesperson.

Typical users are automobile dealerships, "big ticket" salespeople, real estate agents, and any other business whose salespeople rely on referrals to attain their revenue goals.

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3. Businesses that provide service to their customers can employ the telephone and mailbox control aspects of ESI Presence Management to increase the level of support. Companies may offer 24/7 service, although most support groups do not receive the volume of after-hours calls to justify a full staff. On-call technicians can use ESI Presence Management to determine their availability in the office. When not in the office, their calls can be transferred to any number they choose off-premises. Setting "quiet time" eliminates the technician's receiving support calls on his cell phone at 4:00 AM; instead, such calls will be routed to voice mail.

This level of control is offered by Personal Call Routing. When leaving for the night, the on-call technician's station programming is altered so that his calls are immediately routed to his mailbox. A prompt tells callers to press **4** for off-premises transfer. The technician views the Caller ID of the calling party and determines if it is a call requesting help. If so, he answers the call and assists the customer. If not, he can allow the call to return to voice mail where a message can be left for later retrieval.

Calls will not be forwarded off-premises after-hours if the "quiet time" parameters are set. If it is an emergency, the caller may leave a message, and a technician will return his call promptly. The emergency mailbox can call or page the on-call technician. When the technician retrieves the emergency message, he can return the call. If not, he can elect to call the person back when he returns to duty. This gives the technician control of his telephone, his incoming calls, and indeed, his after-hours life.

Advantages:

- The need for an expensive answering service to screen "emergency" calls is eliminated.
- The on-call technician can spend his time assisting customers who have true emergencies.
- Calls can be previewed to determine the validity of the calls before answering.
- Customers benefit from actual round-the-clock emergency service.

Typical users include equipment repair services, plumbers, electricians, insurance claims desks, computer users needing help, and any other industry offering extended hours of service or assistance.

4. In many small offices, paper sign-in/sign-out sheets are still used. Magnetic "In/Out" boards are also still popular in outside sales environments, requiring employees to move a magnetic "pip" to indicate whether they are in the office, out on an appointment, on vacation, in a meeting, gone on a business trip, and other statuses. Another crucial problem with magnetic "In/Out" boards is visibility. Typically, the board is mounted by the front door at the receptionist's desk, which does nothing to keep the rest of the staff informed.

The ESI Presence Management RFID Reader is installed at the door. Each salesperson is issued an electronic key. The ESI system is programmed so that these are the only keys that are recognized by the system. Everyone, including the receptionist, who needs to know the status of each salesperson, has a DSS key for each of the salespeople's extension numbers programmed onto their telephone.

The ESI system is programmed to reflect the out-of-office status of each scanning salesperson by a distinctively illuminated amber DSS lamp.

Advantages:

- No more magnetic "In/Out" boards.
- Staff members are always aware of the in-office or out-of-office status of each scanning person.
- Other employees can perform their jobs more professionally when answering calls for a co-worker who they know is not in the building.

Typical users include sales groups, real estate agents, automobile dealership sales teams, manager/subordinate groups, legal secretary/attorney assigned pairs, and medical examination rooms.
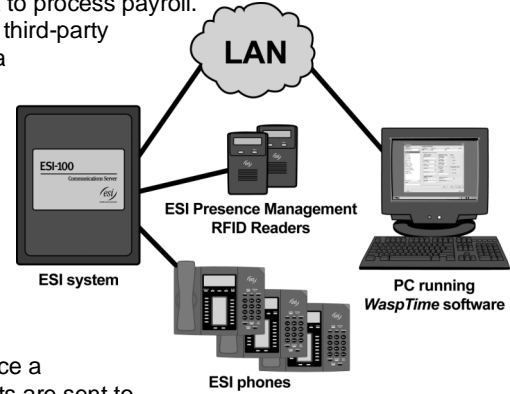
Time and attendance management uses

> **Note:** The *WaspTime* software mentioned herein is not sold by ESI, but rather is available for direct purchase from the manufacturer, Wasp Barcode Technologies (*www.waspbarcode.com*).

1. Time clocks and paper attendance logs are still in use in many companies. Countless hours are wasted in organizing the attendance data to process payroll. ESI Presence Management can optionally be equipped with a third-party software application that automates this tedious task. The data is arranged in a format that is easily imported into several common payroll processing software packages, such as *QuickBooks* and services provided by ADP.

WaspTime logs employee arrival times in a software application running on an HR person's PC. Scan-out events are also tracked. Employees leaving for lunch or exiting the building when on breaks or running errands are also tracked. Rules tables are established to define when a scanning event is recorded.

ESI Presence Management and *WaspTime* combine to produce a cost-effective time and attendance solution. All scanning events are sent to *WaspTime* via the customer's local area network. No dedicated PC is required for this application, and *WaspTime* can run in the background, freeing the PC for its usual uses. The connection between the ESI Presence Management RFID Reader and the customer LAN is the Network Services Processor (NSP).

Remotely installed IP RFID Readers work the same way, enabling the customer to derive the same kind of time and attendance data from remote sites (such as warehouses and externally based sales offices), too.[1]

Advantages:

- *WaspTime* saves company administrators and HR personnel the time involved in manually processing payroll.
- Many times, employees do not complete their paper timesheets until the end of the pay period, making it easy to forget details. *WaspTime* ensures that employee time is tracked more accurately on a daily basis.
- Employees become more aware of their timeliness as their arrival is documented automatically when they scan in.

Typical users include manufacturing facilities, professional offices (accountants, insurance agencies, medical offices), and any enterprise currently using time clocks or manual timesheets.

2. Certain industries periodically demand that employees work long hours or come in on weekends. This is true of almost every business at times. But it is not always desired for the building to be accessible 24 hours a day, seven days a week. *WaspTime*, in conjunction with the ESI system and ESI Presence Management meld perfectly to provide access to those who need it, and a record of those accessing the building outside of normal working hours.

Let's say a law firm is preparing for a major trial. As is normal, there are always late hours worked during the weeks leading up to the trial date. Typically, this trial preparation time is not *pro bono*, but is all part of the billing time that is invoiced to the client. As the attorneys assigned to the case come and go at all hours of the day or night, their time is tracked accurately and processed by *WaspTime*. This is true of their legal assistants, secretaries, junior partners and paralegals, as well. It may be important to have a separate accounting of time spent by each of these persons, particularly if there is a different hourly rate invoiced for these less-skilled positions. If the firm invoices clients monthly or by progress payments, records of time by person can easily be generated at any time.

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[1] IP version of RFID Reader requires ESI Communications Server (running appropriate system software) or IP Server 900.

Advantages:

- Administrative time is saved by generating scanning reports for several electronic keys, assigning different rates of pay, and summarizing the type of function accountable for the time reported.
- Professionals like attorneys can spend time practicing law instead of keeping paper records of time spent on any given client's docket.
- Legal secretaries are freed from the responsibility of tabulating their assigned attorney's time.
- As a bonus, all members of a work team (such as the legal team described in this application) can clearly know when other members of their team are in the building or absent, saving time looking for one another, and allowing work activities to be prioritized.

Typical users include law firms, accountants, financial planners, counselors, and any other profession that bills clients for their time.

Technical overview

ESI has a long history of making advanced technology available as viable solutions for small-to-medium sized businesses at a reasonable cost. The tradition continues with the integration of the ESI system with radio frequency identification (RFID), providing the first practical telephony applications of this proven technology. ESI's advanced research in human presence sensing, for which a U.S. patent was awarded, served as an excellent precursor to the development of ESI Presence Management.

RFID is a proven technology that uses radio waves to positively identify people or objects, such as scannable electronic keys. The ESI Presence Management RFID Reader recognizes an embedded electronic key number to validate the key. This opens the door to a wide variety of telephony applications. **ESI is the first** to integrate RFID technology to support practical, real-world telephony solutions. Exclusively offered by ESI, this advanced technology offers uses as varied as the businesses and organizations that benefit from it:

- Doorphone operation
- Remote entry control of door locks
- Access control

- Presence indication
- Personal Call Routing
- Time and attendance integration

The ESI Presence Management application consists of just a few components. The RFID Reader is a wall-mounted RFID device containing components required for "tag and track" applications. The Reader's RFID transmitter is the electronic key device. This element can be in the form of a scan card or a keychain-type fob.

ESI implementation of the classic RFID reader is unique in that it is designed to serve as a "normal" doorphone. The ESI Presence Management RFID Reader accomplishes this, and much more. In addition to regular doorphone functions such as generating calls from the device to an extension within the system, ESI's RFID Reader can control electric strike locks remotely from any ESI telephone, recognize specific electronic keys as authenticated for any combination of doors or entryways, warn of door-ajar[1] situations, establish a schedule of access availability to provide security to facilities and inventory, and perform time-saving telephone and mailbox functions that ensure the entire enterprise works more efficiently.

A digital or IP[2] station port is all you need to integrate ESI Presence Management with the ESI system. Since the ESI Presence Management RFID Reader is integrated with the ESI system as a key telephone on any digital station port, ESI enjoys a major advantage over standard doorphone products. Eliminating specialized supporting hardware, such as analog station ports or two-way audio control devices, assures that any compatible ESI system (see "ESI systems supported," page 12) can support the ESI Presence Management solution.

When implementing the RFID functionality of ESI Presence Management, three valuable benefits are available to customers: automatic configuration of telephone parameters; secured entry and access functions; and time and attendance applications. To add RFID functionality to ESI Presence Management, RFID electronic keys are activated. The activation process authenticates the keys for use with specific RFID readers, and associates them with specific ESI telephone extensions.

Automatic configuration of the ESI extension and mailbox includes rerouting the call forwarding destination, altering the mode of call forward to immediately route calls to voice mail, changing the outbound mailbox greeting, activating the message notification function, and controlling the "reach-me" and "quiet time" features. These parameters are controlled on a station-by-station basis.

Secured entry and access functions include scanned entry to buildings and facilities, as well as access to secured areas within a facility. It is not necessary for an electronic key that is enabled to gain building access to be able to access secured areas within the building itself. Recognition of each RFID electronic key by each installed ESI Presence Management RFID Reader is individual with no limitations or exclusionary rules.

The **time and attendance** application involves installing an NSP-enabled ESI system, implementing ESI Presence Management RFID Readers, distributing electronic keys to all users whose time is to be tracked, and installing the third-party application *WaspTime*[3] in a customer-provided workstation or PC. Users scan their RFID electronic keys to "clock in" for the day. The scanned information is sent via the customer's LAN to the PC on which *WaspTime* is installed. This data flows from the RFID Reader to the ESI Presence Management system via the station port connection, on through the Network Services Processor (NSP) to the LAN, where it is directed to the customer's PC.

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[1]   Door-ajar alarm only on IP version of RFID Reader.
[2]   IP version of RFID Reader requires ESI Communications Server (running appropriate system software) or IP Server 900
[3]   Not sold by ESI; available for direct purchase from the manufacturer, Wasp Barcode Technologies (*www.waspbarcode.com*).

Specifications and installation requirements

ESI systems supported

ESI Presence Management is supported on the following ESI communications systems and software versions:

System	System software version *(or greater)* required for use with . . .	
	Digital RFID Reader	**IP RFID Reader**
IP Server 900	[All]	[All]
ESI-1000, ESI-200, ESI-100 or ESI-50	[All]	xx.5.3
ESI-50L	[All]	[Not supported]
ESI-600	15.1.x	16.5.3
IVX® S-Class Generation II with voice mail[1]	4.6.0	[Not supported]
IVX X-Class	10.7.0	[Not supported]
IVX E-Class Generation II	2.6.0	[Not supported]

> **Note:** If more than three port cards are installed in IVX E-Class Generation II, Base Cabinet I **must** have a 5-amp power supply when ESI Presence Management RFID Readers are installed.

Station cards supported

Digital

The ESI Presence Management **digital** RFID Reader may be installed on any D8 Module on an IP Server 900, or any "CS"- or "E2"-style digital station card (or a "482" digital station card in an ESI-50, ESI-50L, or an IVX S-Class Generation II system). Older IVX 128/E-Class port cards cannot be used for ESI Presence Management installation, although they may reside in the same system with ESI Presence Management. Each RFID Reader must be assigned to its own digital port. There is no limit to the number of RFID Readers that may be installed in a system except for the system's overall station capacity limitations. On IVX S-Class, ESI-50, and ESI-50L **only**, each RFID Reader operates on any digital port. On other compatible ESI systems, each RFID Reader **must** be connected to a digital port on one of the following port cards:

Port card	ESI part no.
CS-612	5000-0418
CS-684	5000-0419
CS-D12	5000-0420

Port card	ESI part no.
CS-DLC12	5000-0422
CS-DLC82[2]	5000-0498
E2-612	5000-0315

Port card	ESI part no.
E2-684	5000-0316
E2-D12	5000-0317
E2-DLC12	5000-0348

IP

Each ESI Presence Management **IP** RFID Reader[3] requires a single licensed IP resource on an IP Server 900, or a single local or remote licensed IP port on an IVC (Intelligent VoIP Card) installed in an IP-enabled ESI Communications Server. The number of IP RFID Readers that can be connected to the system is limited only by the number of available IP resources/ports and licenses. Installation of an IP RFID Reader on the ESI-50 requires activation of the ESI-50's built-in IVC. Installation of an IP RFID Reader on the ESI-1000, ESI-600, ESI-200, or ESI-100 requires that the system be equipped with one of the following IVCs[4]:

IVC model	ESI part no.
CS-IVC 12R12EL	5000-0461
CS-IVC 24R	5000-0456

IVC model	ESI part no.
IVC 12R12EL	5000-0460
IVC 24R	5000-0403

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[1] ESI Presence Management is not supported on the discontinued IVX S-Class Generation II with Integrated Answering Machine.
[2] For only ESI-50.
[3] IP version of RFID Reader requires ESI Communications Server (running appropriate system software) or IP Server 900.
[4] Check the appropriate ESI Communications Server documentation to confirm compatibility with the system model in question as well as whether a Hot-Swap Adapter is required to install the IVC on the ESI-1000, ESI-600, or ESI-200.

RFID electronic keys

When implementing the RFID functionality, the customer purchases a unique RFID electronic key device for each employee. Two choices of tag devices are available: a scannable card or a key ring fob. Electronic keys are available in packages of five, 25, 100, and 500. Each electronic key is pre-licensed before shipping. Licensed electronic keys may be validated on any given ESI Presence Management system.

ESI Presence Management RFID Reader specifications

Each ESI Presence Management RFID Reader is typically wall-mounted, and measures 5.5″ high × 3.6″ wide × 1.3″ deep. A programmable **CALL** key is provided for doorphone operation, and a built-in electro-mechanical relay is used for door lock control. The RFID Reader includes a backlit two-line display to provide status information, a microphone and speaker for hands-free communication, an RFID transceiver for advanced-feature operations, and a tamper switch that can be wired to an alarm system.

Digital RFID Reader

The digital RFID Reader is connected to and powered by a digital station port on a compatible ESI Presence Management system (see "ESI systems supported," page 12).

Prior to October 1, 2007, there were two models of the digital RFID Reader: a weather-resistant "outdoor" model and a model intended only for interior use (#5000-0345). **Now,** there is only **one** digital model — an **Inside/Outside** RFID Reader (#5000-0360, which is the same part number once used by the earlier "outdoor" model). The Inside/Outside RFID Reader (as was true for the earlier "outdoor" model) is suitable for installation in environments regardless of whether they are climate-controlled (examples of likely installation areas that aren't climate-controlled include exterior building entryways and storage rooms). **However**, if the Inside/Outside RFID Reader is to be installed in an area exposed directly to extreme weather conditions (*i.e.*, heavy rain, sleet, *etc.*), it **must** be mounted inside the optional weather-proof enclosure (#5000-0365).

IP RFID Reader

The ESI Presence Management **IP** RFID Reader (#5000-0545) is connected to and powered by a Power over Ethernet (PoE) switch or adapter only. It is supported on only the IP Server 900 and ESI Communications Servers (except for the ESI-50L, which must be upgraded to an ESI-50 to provide support for IP devices). In addition to the general RFID Reader features mentioned above, the IP RFID Reader also includes a door-ajar connection that can be wired to a sensor on a door.

Tested door strikes

ESI has tested and found several acceptable electric door strikes to use as a release mechanism when the ESI Presence Management RFID Reader is utilized as a doorphone with remote entry capabilities:

- Security Door Control (SDC) Model 40-4S
- Rutherford Controls (RCI) Model A71-12DC 12 VDC Fail Locked
- HES 5000-12/24 Electric Strike
- Effeff (Fritz Fuss) Model 41-05

It is recommended that a locksmith is contacted to install the door strike.

> **IMPORTANT WARNING**:
> If not installed properly, electromagnetic locks can be dangerous with respect to fire and smoke safety. Because of this, a licensed professional in most, if not all, areas must perform installation of this type of lock. Before planning an installation of this type of locking mechanism, it is very important to always check with the local authority in the area that has jurisdiction over this type of electrical installation.

> **DISCLAIMER:**
> ESI TAKES NO RESPONSIBILITY AS TO THE LEGALITY OF CONTROLLING THE OPERATION OF AN ELECTRIC DOOR LOCK USING THE ESI PRESENCE MANAGEMENT RFID READER IN ALL JURISDICTIONS. IT IS THE RESPONSIBILITY OF THE INSTALLING COMPANY AND THE END USER TO DETERMINE AND FOLLOW THE APPLICABLE STATE AND LOCAL LAWS AND REGULATIONS REGARDING THE PROPER MOUNTING, CONNECTION AND USE OF THE ESI PRESENCE MANAGEMENT RFID READER FOR DOOR LOCK CONTROL.

For disclaimers concerning video (live/recorded) and audio as accessed via ESI Media Management, please refer to the *ESI Media Management Product Overview* (ESI # 0450-1238).

Glossary of terms

Authentication The verification of the identity of a person. ESI Presence Management's authentication applications include secured access and time and attendance payroll information gathering.

Automatic identification

A term that covers methods of identifying valid reader scanning events, capturing information, and entering it directly into computer systems without human involvement. This is used for the time and attendance applications as well as personnel tracking in, out, and within the workplace.

Electronic key A key fob or card with an embedded RFID tag. See *RFID tag*.

Radio frequency Identification (RFID)

A method of identifying unique items using radio waves. The ESI Presence Management RFID Reader communicates with an electronic key, which holds digital information in a microchip.

Read The process of retrieving data stored on an RFID electronic key by sending radio waves to the electronic key and converting the waves the electronic key sends back into data. The data retrieved by the ESI Presence Management RFID Reader is the person's name and extension number associated with the electronic key.

Read range The range from which the ESI Presence Management RFID Reader can communicate with an electronic key. ESI Presence Management integrates with passive electronic keys. The read range is relatively short because passive electronic keys generate their own power source from the signal to the reader. The nominal read range is approximately four to six inches; this minimizes the occurrence of false reads and inadvertent log-out.

Reader A device, such as the ESI Presence Management RFID Reader, used to communicate with RFID electronic keys. The reader has one or more antennae, which emit radio waves and receive signals back from the electronic key. An RFID reader is also sometimes called an interrogator because it "interrogates" the electronic key. This is the process of authentication.

RFID tag A microchip, attached to an antenna, that is packaged in a way that it can be easily carried and used by the electronic key owner. The electronic key picks up signals from and sends signals to the RFID Reader. The electronic key contains a unique serial number, which is associated within the ESI Presence Management system with the electronic key owner's name and extension number. For individual convenience, ESI Presence Management users have a choice of RFID electronic keys: key fob or card.

Note: For more complete details on ESI Presence Management, consult the *ESI Presence Management Installation Manual* (ESI document # 0450-0792). Resellers may download this document and any others mentioned herein from *www.esi-estech.com/Resellers* (password required).