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# MANAGING FIRE PROTECTION AND LIFE SAFETY EQUIPMENT COMPLIANCE



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**CHALLENGES OF MANAGING FIRE PROTECTION AND LIFE SAFETY EQUIPMENT**

Fire causes property damage, disruption in business operations, injuries and even fatalities. The economic costs are estimated to be close to \$10B a year in property damage and close to 5,000 cases of personal injuries and deaths. (Source: www.NFPA.org). In response, federal organizations have modified regulations and standards to mandate more stringent fire and life safety guidelines. Many states have adopted National Safety Codes statewide. Some local laws have legislated new construction for high-occupancy buildings to include fire sprinkler systems by default. Authorities having Jurisdiction (AHJ) are changing audit practices to better enforce compliance, i.e. JCAHO now conducts unannounced surveys at hospitals and healthcare facilities. Insurance carriers are taking active measures to better identify and evaluate risk factors in their insured customer base. Property and general liability underwriters are becoming more focused on their clients' ability to provide documented proof in the form of compliance related inspection records. Corporations have spent money upgrading outdated exit fire doors, adding fire and smoke detection devices, alarms, and other suppression systems. Universities have taken a more proactive approach to implement more fire safety training, emergency response education and awareness programs campus-wide. These actions in effect all aim to achieve one objective - ensure that in the event of a fire, all elements in the fire protection and fire response system function and operate as intended to preserve lives and property.

Organizations today have taken actions to identify areas of improvement in their safety programs, to further mitigate risk. Maintaining various fire protection systems and complying with regulatory obligations have forced safety departments, facilities and risk managers to rethink and reconsider their current methods and processes. One area of scrutiny involves compliance driven standards on inspections, test and maintenance (IT&M), and records retention guidelines for fire protection equipment and systems. Some examples are NFPA 10 regulations for fire extinguishers, NFPA 25 for water based sprinkler systems, and NFPA 72 for fire alarms. These components in a fire suppression infrastructure require different schedules, intervals and inspection protocols. Keeping these devices functioning requires that they are inspected and maintained per NFPA regulations. Managing these IT&M schedules across several facilities given the current resource and time constraints can be quite a challenge.

Not only do organizations need to have trained personnel to perform and service these devices, they need an organized and systematic way of managing information collected by different people from various sources at differing times. It is also required to have a means to capture impairments as they are encountered or scheduled, to facilitate timely correction - i.e. discharged fire extinguisher, a closed valve or a non-responding detection or alarming device. Some still use a traditional pen and paper system where field personnel perform inspections in the field and bring back handwritten notes to be transcribed or re-keyed into a computer. Data re-entry is then completed before reports or records can be collectively reviewed for corrective action, process gap findings, or submission to management and local fire officials for recordkeeping.

Diagram 1 illustrates a simplified workflow of a traditional pen and paper (inspection log sheet) based inspection, service or maintenance process.

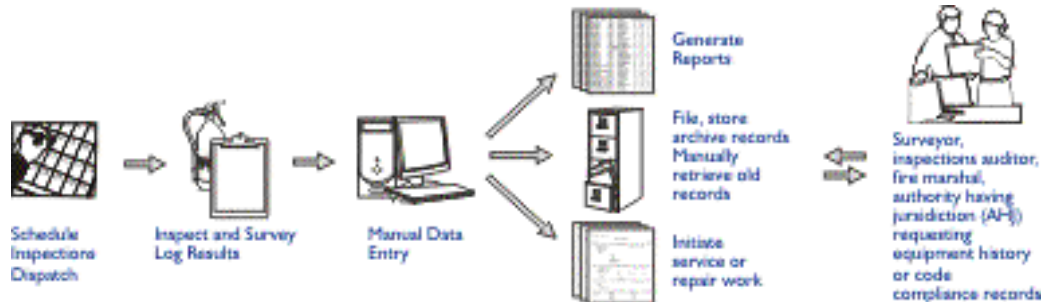


DIAGRAM 1 - PEN AND PAPER BASED INSPECTION PROCESS

**AN ALTERNATE SOLUTION - AUTOMATION USING MOBILE COMPUTING TECHNOLOGY**

Computer technology has allowed us to automate many tasks which have saved us time. Email, data processing and transfer have allowed us to send and receive information more quickly and more readily with higher capacity and integrity. It makes logical sense to bring that technology to bear on compliance inspections, equipment maintenance, system tests, data capture, collection, transmission, collation, consolidation, records update, data storage, and report generation. Mobile computing technology can electronically record, transmit, update and save critical information for compliance driven processes. The benefit of adopting such technology is time savings, increased data integrity, improved workflow processes and standardized practices while increasing team productivity and efficiency.

Not all electronic inspections systems are created equal. Many solutions have emerged using small handheld PDA's that simulate the paper forms to record information. The onus still lies with the user to know what forms to choose depending on what test needs to be performed. It may be difficult for these systems to account for all types of equipment especially for those that need to be moved for servicing or those requiring multiple tests at differing intervals. Using an electronic system utilizing bar coding in conjunction with mobile handheld devices to track and manage items provides a very cost effective, integrated solution to automate the process of inspections and facility service type activities.

Diagram 2 shows how an electronic system utilizing bar codes and handheld devices automates and streamlines the process of data collection, update, filing, search, schedule and reporting associated with regulatory inspections, mandatory audits, recurring preventive maintenance activities, etc.

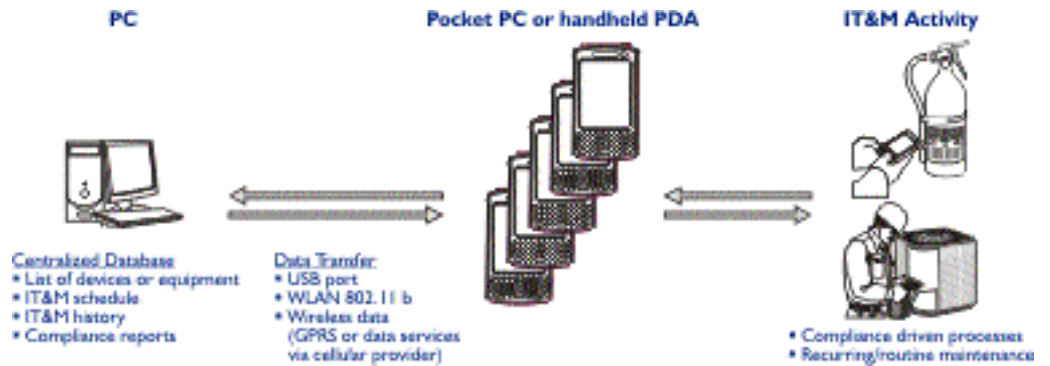


DIAGRAM 2 - ELECTRONIC SYSTEM (BARCODE, HANDHELD POCKET PC (PPC), PC)

The electronic system will usually consist of software that resides on a PC computer, and on the handheld device, bar code labels to be placed on items to be inspected and key personnel such as the facility or safety manager and a field technician managing the system and operating the handheld devices.

The PC hosts the database containing what devices or equipment are to be inspected, where they are located, what IT&M schedule is required, what protocols to perform per regulation and who are certified to perform these inspections. You can also setup business rules to trigger actions or send notifications based on impairments or incidents encountered in the field. You may also 'group' devices together as set 'itineraries' or 'routes' for the inspection personnel to optimize their time in the field. The PC is the centralized location where all inspection records are saved and stored such as equipment status, IT&M history and compliance reports.

Once the database is setup, and IT&M schedules are set and assigned, information from the PC is transferred to the handheld device. Field technicians will have on hand the list of devices to inspect, when they are due and what inspection protocols to use (weekly, monthly or annual check, etc.). The handheld device can prompt the technician through a series of specific questions. Once the question or set of questions are completed, the handheld PPC then directs him to the next inspection location, device or equipment. After the technician completes all his assigned tasks, the information is synchronized and transferred back to the PC either through the device cradle, wireless local area network (802.11b) or wireless data (GPRS or similar networks allowing data transmission via wireless cell network).

Reports can be scheduled to be automatically printed, emailed or saved. Reports are used to monitor compliance levels, productivity, analyze trends, capture incidents and impairments, and track work orders.

### SOLUTIONS PROVIDERS - THINGS TO CONSIDER

Some recommendations on what to look for in a mobile solutions provider for automating compliance driven workflow processes and other similar procedures:

- ▶ **Handheld device options:** Portable digital assistants (PDAs), portable laptops or Pocket PCs are choices that come in consumer or industrial grade models. Some devices were designed with less powerful processors that are more suitable for straightforward "collect and store" type data processing. Some come equipped with built-in scanners, current Windows based operating systems, faster processors and memory that could handle more than data collection but also the transmission and management of information. Recent wireless technologies 802.11b and/or GPRS (send data via cellular network) allow for a higher level of work coordination especially for personnel in various locations. A person is not tied to a physical desktop PC to be able to connect and update information used in the field. Consider vendors who offer options that maximize your efficiency in the field, e.g. ruggedized devices or barcode labels that meet strict environmental and industrial needs.
- ▶ **Technology:** The offering should utilize current technology that is versatile and easy enough to integrate with existing IT infrastructure and backend systems. Consider solutions that handle standard database servers such as Oracle and SQL. The technology that drives the solution offering should also maximize the utilization of available IT bandwidth to allow for simultaneous upload and download of information from multiple handheld devices.
- ▶ **Flexibility:** The solution should be scalable and customizable for use with various regulatory and business rules. The system can be adaptable to standardize work across various organizations. The system should allow configurations that accommodate simple 'pass/fail' checks or more involved procedures requiring additional data such as numeric measurements, dates, text notes, etc.
- ▶ **User Interface:** The proposed solution should be easy to implement, use and train people with. It should follow standard Windows graphical user interface (GUI) where most PC-versed users are accustomed. Built-in productivity tools such as pre-populated default answers or automatic scheduling of reports are some functions to look for that can further save you time without compromising thoroughness and completeness. This facilitates timely distribution of information to managers, local fire marshals and key stakeholders.
- ▶ **Security:** Consider user access granted via 'username' and 'password' that are assignable and changeable based on staff or role changes. The system should also be able to account for situations where multiple locations may require a centralized data storehouse but want departmentalized access to local information on "as need to know" basis.

- ▶ **Company profile:** Financial stability and credibility in the industry are a few things to look for in a solutions provider. Gather inputs from customer references or online listserv groups. A quality vendor demonstrates strong commitment to the product by involving their customers in the product development process. The company also provides ongoing and comprehensive hardware and software technical support on the system once it is in place. A good vendor also provides other options for customers such as training, consultation, implementation, data conversion, technical support and turnkey services.

## CONCLUSION

For organizations looking for an electronic inspections solution to efficiently manage service inspections, test and equipment management activities in areas such as fire and life safety protection, preventive maintenance and other compliance driven processes, Brady/TISCOR has the automated solution to meet your compliance driven needs. FM for Fire is TISCOR's fire and life safety inspections and equipment management software system that utilizes barcode technology and handheld Pocket PCs to quickly track and document inspection and maintenance activities on all types of fire protection and life safety equipment, including but not limited to extinguishers, eye wash stations, alarm systems, sprinkler valves, fire pump, pressure gauges, plus more. It is a scalable, enterprise solution that is flexible and customizable to streamline other workflow processes within the organization. Our solution can save time, improve accountability, data integrity, prove and maintain regulatory agency compliance, and increase team productivity and efficiency. To learn more about FacilityManager(FM) for Fire, visit [www.TISCOR.com](http://www.TISCOR.com)

TISCOR, a wholly owned subsidiary of Brady Corporation, is a pioneer and industry leader in mobile inspections and equipment maintenance management systems. Our solutions are deployed across various industries in Global 1000 and mid-market companies, and military or government organizations.

Brady Corporation, founded in 1914, publicly traded global company headquartered in Milwaukee, WI is an international manufacturer and marketer of complete solutions that identify and protect premises, products and people. From Brady's high-performance labels and signs and safety devices to TISCOR's inspection and maintenance management systems, both companies are dedicated to providing innovative products that improve productivity, performance and safety. More information on TISCOR and Brady products, systems and services is available at [www.TISCOR.com](http://www.TISCOR.com) and [www.BRADYCORP.com](http://www.BRADYCORP.com).