SMARTER ELECTRICAL TESTING

HOW DO MRO SYSTEMS AND EDIS CO-EXIST TO

PROVIDE A BEST PRACTICE FOR ELECTRICAL TESTING

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1. MRO System and EDIS

MRO SYSTEMS, like IBM's Maximo, are asset management systems used in the *Maintenance, Repair and Overhaul* of large building estates. EDIS is an enterprise "Electrical Distribution Information System" and provides a central repository for all electrical information relating to large buildings and estates.

In the facilities management context MRO systems provide an asset level reference of the assets across the estate. For example the distribution boards, electrical distribution panels or other electrical distribution assets. EDIS provides a more detailed view of these assets or a **component view**, e.g. circuit description, circuit over current protection, cable sizes, installation type, distribution board schedules, load tests, associated circuit test data, etc. In this way EDIS is designed to complement the MRO system and processes by providing details not managed by the MRO system, but still essential for managing and controlling the electrical compliance across an estate.

2. Massive data volumes needs to be managed for electrical compliance

An estate with +/-100 buildings estate can have 8,000+ distribution boards (depending on the nature and size of the buildings). This translates into potentially more than 200,000 circuits across the estate – EDIS is designed to track the circuit data, change history, test history and compliance of circuits. This task is important for electrical compliance purposes.

Managing component level information circuit information for a large estate in the MRO is not sensible; EDIS is an integral part of the electrical compliance process and is designed to easily, efficiently and automatically manage component (circuit) level data for electrical distribution systems, while complementing the MRO system and processes

3. Why circuit level data is required for electrical compliance management

The national standard for the safety of electrical installations, BS 7671: Requirements for electrical installations, is a key standard associated with electrical compliance. **BS7671 requires each circuit to be periodically tested and inspected** – for this reason tracking circuit level compliance is an important compliance requirement and a best practice in compliance management. The EDIS data is based on the requirements of BS7671.

When undertaking periodic inspections, testers are often refused permission to shut down parts of an installation or circuits to carry out the required tests; the tester duly records a limitation on the Inspection Report. Similarly in the larger and older buildings circuits may not be verifiable, or traced to their endpoint. The situation can go on for years and elements of an electrical installation may never be assessed, which of course, does not comply with BS 7671 or the Electricity at Work Regulations 1989; electrical installations must be tested and inspected at regular intervals. The irony is that those circuits for which permission to isolate is refused are those which require the most scrutiny to ensure that they do not fail (IEE Wiring Matters, Summer 06, www.theiet.org). EDIS enables the responsible person to easily manage this issue by enabling the tracking of compliance at the circuit level.

4. Electrical schedules are required by designers, planners, electricians and testers

Providing a single repository of electrical distribution board schedules, with an audit trail of circuit level changes is a productivity boost to designers, electrical supervisors and contractors. It enables the vast amount of data to be easily used for establishing whether a new board is required, whether a spare a circuit can be used or if an existing circuit can be extended – EDIS reduces the number of information requests, waiting for responses, the amount of paper and emails; **providing electrical information self-service for the maintainers, designers and contractors .**

5. EDIS Facilitates data re-use

Imagine retyping 8,000 board and 200,000+ circuit records every 5 years; EDIS provides distribution board schedules in a variety of formats which are used by electricians and contractors to quickly create large certificates by using the latest circuit information.

6. Scheduling and planning electrical work

For scheduling purposes the MRO system will provide a work order for electrical testing, new electrical installations and for minor works – each of these activities results in a new set of data for the electrical circuits.

Once the work order has been created the electrical testing can start, electricians use EDIS to obtain the data and managers use EDIS to track the testing and updates for each circuit. EDIS provides the electrical testers and managers a workflow and governance process to monitor which circuits are tested.

When the tester completes the electrical certificate in EDIS, the certificates is generated as a PDF and the electrical distribution board sheets are automatically updated with the latest board and circuit information. This information is stored as a PDF and in a relational database providing easy re-use, useful reports and many download formats.

On completion of the work associated with the MRO work order can be automatically updated using the system API's if available or the completion details can be manually updated into the MRO system. The information on the completed work order will include a link to EDIS from where the certificates and circuit level information can be viewed, downloaded or analysed.

7. Tracking condition report observations and recommendations

A key part of electrical compliance management is the management of observations and recommendations included in the condition report. These observations and recommendations can be general to the building or specific to the distribution board. EDIS provides access to these observations and recommendations and makes them available for reporting and action purposes before and after the electrical inspection and testing has been completed. For older buildings the observations can be extensive and the list of actions need to be actively managed in order to achieve compliance. It is not sensible to track these individual issues within the MRO system; EDIS is designed to ensure these actions are tracked and completed as part of the compliance certification process. The MRO work order associated with ta group of compliance actions can be updated with a reference to the EDIS record provided in the work order. AN API to automate this process is also possible.

8. Online planning and tracking the electrical testing

Electrical testing is a high volume task, the documentation for planning, tracking and reporting on the task is extensive, EDIS compliance reports range from 25 to 1500+ pages.   EDIS provides the electrical testing project manager and compliance manager a tool to track the progress of the testing and monitor the accurate completion of the individual circuit testing. The alternative of shared folders, disparate systems and spreadsheets consistently leads to inefficiencies, difficulty in tracking and the inevitably lost records and documentation.

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