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DCiM: The Companion on the journey to ISO 50001 Certification

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Travel itinerary

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Context Establishment

In this ebook, we explain how DCiM (Data Center Infrastructure Management) and ISO 50001 standard can transform your IT infrastructure. Learn how to maximize energy efficiency, meet environmental standards, and enhance sustainability. We hope this ebook can serve as a guide towards a more efficient and responsible future in IT

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1. Scope of the energy management system

Standard point 4.3.

The ISO 50001 standard is an essential and robust international framework for efficient energy management in organizations of all types and sizes. Its goal is to help organizations improve their energy efficiency, reduce costs, and minimize their environmental impact. To understand the scope of ISO 50001, we must first grasp that it applies to any organization seeking to enhance its energy performance. This includes private businesses, government institutions, non-profit organizations, and more. The standard is built on the concept of continuous improvement, which means that no matter how large or small your organization is, there is always room for improvement.

The value of DCiM in energy management.

El DCIM enables the complete digitization of information related to energy management. This includes recreating floor plans, tracking electromechanical and information technology infrastructure, as well as detailed equipment and wiring management. One of the advantages of DCIM is its total accessibility, as it provides a single environment where all information is stored..

Total accessibility is achieved through the centralization of critical data in one place. This means that any user with the appropriate roles and permissions can access the information they need in real-time. There's no longer a need to search across multiple systems or rely on paper documents. DCIM makes all essential information readily available to your employees, simplifying decision-making and efficient energy management.

DCIM goes beyond mere data collection. It also provides real-time monitoring and customizable alerts. This means you can stay informed about any anomalies or inefficiencies in your energy consumption as they occur. Alarms, specifically, proper threshold management, allow you to take immediate actions to prevent energy waste and unnecessary costs.

2. Energy policy

Standard point 5.2

This policy is essential to guide energy management in your organization, and DCIM can be a crucial tool for its implementation and monitoring.

The energy policy should serve as the guiding principle for your organization towards more efficient energy management. It is a formal declaration of your company's commitments to reducing energy consumption and minimizing its environmental impact. This is not only beneficial for the planet but can also help you reduce operational costs and enhance your reputation in the market.

A strong energy policy defines your energy efficiency objectives and commitments to reduce carbon footprint, optimize the use of natural resources, and promote energy awareness throughout the organization.

The value of DCiM in the energy policy

Task automation

The defined energy policy can be incorporated into pre-programmed tasks in DCIM. For example, reports on load balance by phase or power factor can be generated and scheduled for automatic delivery on a weekly or monthly basis to track the policy. This eliminates the need to perform these tasks manually and ensures consistent compliance.

Tracking key indicators.

Additionally, DCIM allows you to track key performance indicators (KPIs) such as Power Usage Effectiveness (PUE) and others over time. This provides you with a clear view of how your energy policy is reflected in your organization's energy consumption. You can identify trends, make informed decisions, and adjust your policy as needed

Continuous improvement.

The energy policy is not static; it evolves with your organization. DCIM provides you with the necessary data to assess the impact of your policy and make continuous improvements to your energy management approach..

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3. Energy Objectives and Planning.

Standard points 6.2.1 and 6.2.3

The value of DCiM in goal definition.

The ISO 50001 standard encourages you to define energy objectives and targets that support your energy policy. These objectives are like milestones on the path to energy efficiency and sustainability.

Once you have your energy objectives and targets defined, it is essential to plan how you will achieve them. This involves identifying the necessary actions and measures, assigning responsibilities and resources, and setting realistic deadlines for their implementation.

Detailed planning

DCIM allows you to establish detailed plans to achieve your energy objectives. You can assign specific tasks to responsible individuals, set deadlines, and schedule reminders to ensure that everything is carried out as planned..

Monitoring and analysis.

The energy policy designed requires a plan to implement measures, analyze them, and make decisions. DCIM provides you with the tools to carry out this monitoring effectively. You can set thresholds and alarms that notify you when energy consumption deviates from your objectives

Useful information.

Monitoring in DCIM goes beyond data collection. It can help you turn this data into useful and documentable information in reports. These reports are essential to ensure compliance with your energy policy and provide a solid foundation for decision-making.

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4. Energy Review.

Standard point 6.3. 3

It focuses on the energy review. This allows you to assess progress towards your objectives, identify areas for improvement, and make informed decisions on how to optimize energy usage in your organization.

The value of DCIM in energy review

Real-time monitoring

The DCIM system allows for real-time monitoring. This means you have access to up-to-date data on energy consumption and the performance of your systems at all times. You can observe consumption patterns and trends, making it easier to identify potential inefficiencies

Thresholds and notifications:

With DCIM, you can set notification thresholds before anomalous situations occur. For instance, if a piece of equipment starts consuming more energy than usual, you will receive a notification. This feature allows you to design a notification policy based on the criticality of events, ensuring that swift actions are taken in case of significant issues.

Efficient communication management.

DCIM enables you to manage communication effectively, ensuring that relevant data reaches the right individuals. This improves collaboration and facilitates informed decision-making.

Accessible reports

All this information collected through DCIM is presented in reports that provide a solid foundation for energy review, allowing you to assess progress towards your objectives and make informed decisions for continuous improvement.

5. Energy performance indicators

Standard point 6.4.

This standard point focuses on the definition and use of Energy Performance Indicators (EnPIs). EnPIs are like markers on a dashboard, providing a clear view of your organization's energy performance. Defining and using appropriate EnPIs allows you to measure progress towards your energy objectives and make data-driven decisions.

The value of DCIM in performance indicators.

Incorporation of energy management strategies.

DCIM allows for the incorporation of energy management strategies using EnPIs, as described in the Data Center standard ISO 50600, which includes best practices and captures the most relevant EnPIs. All of this can be collected within the DCIM system, provided that the data is supplied by the existing infrastructure.

Monitoring and visualization of EnPIs.

DCIM not only stores data about the energy performance of your systems but also provides you with tools to monitor and visualize your EnPIs clearly and accessibly. You can see how your EnPIs evolve over time and whether they are moving closer to or farther away from your energy objectives.

Informed decision-making.

EnPIs provide valuable information for decision-making. If an EnPI indicates poor performance, you can investigate the cause and take corrective actions promptly. This helps you stay on course towards energy efficiency.

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6. Energy Baseline (EnB).

Standard point 6.5.

The Energy Baseline (EnB) is like the starting point in a race toward energy efficiency. It defines your organization's current energy consumption level and serves as a reference to assess future advancements in energy

The value of DCIM in the Energy Baseline.

Clear definition of the EnB

DCIM enables you to define your EnB clearly and accurately, taking into account real data collected from your existing infrastructure. This provides a solid and reliable foundation for assessing progress.

Trend analysis in DCIM.

Analyzing trends is important for adjusting Energy Performance Indicators (EnPIs) in line with the new baseline situation that will change with the growth of the data center (DC) infrastructure. One of the best indicators of progress is the trend of the EnPIs themselves in line with the new reality. DCIM facilitates this task by linking monitoring and reporting to the existing infrastructure.

Tracking and updating.

DCIM allows you to continuously track your EnPIs in relation to the EnB. As your infrastructure grows and evolves, you can update the EnB and adjust your energy efficiency goals accordingly.

7. Energy data collection planning.

Standard point 6.6. 6

Energy data collection planning is like preparing a map before embarking on a journey. It ensures that you collect the necessary information to assess your energy performance effectively and accurately.

The value of DCIM in energy data collection.

Comprehensive monitoring and control: DCIM goes beyond monitoring specific equipment, such as UPS or HVAC systems. It allows you to monitor the energy consumption of individual devices through elements like rPDUs (Remote Power Distribution Units) or distribution panels. This means you can track how the growth of your information technology infrastructure impacts the entire energy chain.

Strategic planning: With DCiM, you can strategically plan the collection of energy data. You can identify which elements of the energy chain and which consumers are the most critical and require special monitoring. This allows you to focus on collecting accurate data where it matters most

Compliance with the requirement: DCIM's ability to monitor and control key elements of the energy chain and consumers allows you to fully comply with the requirement of ISO 50001 regarding energy data collection planning..

8. Competence

Standard point 7.2.

This point focuses on the retention of appropriate information as evidence of competence and how to ensure that your team is prepared to manage energy effectively. DCIM is not only a tool for energy management but can also be a valuable ally in developing your team's competence.

The value of DCIM in competence.

Training and education

DCIM provides training and education for your staff in energy management. It offers a user-friendly interface that allows your team to quickly become familiar with the tool and learn to use it effectively.

Access to historical records.

The DCIM system is scalable, which means you can expand the disk storage as needed to retain the desired historical records. This is crucial for tracking and the ongoing training of your team, as they can access historical data to analyze trends and patterns.

9. General communication.

Standard point 7.4.1.

Communication as a key element in energy management is another area of interest in the standard. Communication is like the glue that holds the energy management team together. It is essential to establish effective communication channels.

The value of DCIM in general communication.

Real-time communication.

With DCIM, all the relevant information about the Data Center is in a single environment. This allows users with editing permissions to take actions in the system that reflect real-time changes. Communication is smoother and more accurate

User training.

Each user should receive training on the adopted work methodology, in which DCIM plays a significant role. Training ensures that everyone is on the same page and can use DCIM effectively as part of their new way of working.

Access to relevant data.

DCIM allows users to access data that is relevant to their roles and responsibilities. This means that each team member has access to the information they need to make informed decisions.

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10. Documented general information

Standard point 7.5.1

We alight at this stop to learn about the management of documented information.

Documented information is like the compass that guides your path in energy management. To meet the requirements of ISO 50001 Standard, it is essential to maintain records and documents that support your processes. This includes the documented information required by the Standard and the documented information that the organization determines as necessary for the effectiveness of the Energy Management System (EnMS) and to demonstrate improved energy performance.

While DCIM is not a document management system, it can be a very interesting tool in managing documented information

The value of DCiM in general documented information

Scalability for any size

DCIM is fully scalable, which means it can be adapted to any size of infrastructure or data center. This is essential to ensure that you can manage documented information regardless of the size of your organization.

File and link storage

Although DCIM is not a document management system, it allows the functionality of storing files of any type or including links to an internal SharePoint. This enables you to control and access all the documentation of the EnMS from the same DCIM interface.

Ease of access and backup.

Having your documents and information related to energy management in one place facilitates access and backup. DCIM helps you keep the information you need to meet the standard's requirements organized and readily available

Other standard points directly related to DCiM

In this last stop, we will visit several sections of the standard that are also easy to efficiently and effectively comply with if you have a DCiM. We will explore everything from the control of documented information to non-conformity and corrective action.

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The value of DCiM in other standard points

Standard point 7.5.3

Control of documented information

DCiM allows you to identify and control the documented information necessary for the operation of the Energy Management System (EnMS). This ensures that you have the confidence that processes have been carried out as intended. You can create and maintain records of processes and operations related to energy management, making it easier to meet this requirement

Standard point 8.1

Planning and Operational Control.

Planning and operational control are fundamental for the success of your EnMS. With DCiM, you can efficiently plan and schedule your energy management operations. This allows you to define and track key tasks and processes, ensuring that everything is carried out as intended. Additionally, you can monitor the real-time execution of your operations and promptly detect any deviations or issues

Standard point 9.1.1

Monitoring, measurement, and evaluation of energy performance and the EnMS

DCiM provides the capability to monitor your energy performance and the EnMS in real-time. You can analyze the collected data and measure your progress towards energy efficiency goals. When deviations or issues are detected, DCiM allows you to take corrective actions immediately, which is essential for the continuous improvement of energy efficiency

Standard point 9.1.2 **Evaluation of compliance.**	With DCiM, you can evaluate the compliance of your processes and procedures related to energy management. You can verify that you are following the procedures correctly and meeting the requirements of the standard
Standard point 9.2.2 **Internal audit program.**	DCiM provides a rich source of data for conducting internal audits. You can use the collected information to carry out efficient and effective audits that support continuous improvement. The ability to generate detailed reports on energy performance and procedure compliance simplifies the auditing process.
Standard point 9.3 **Management review**	Management review is a crucial part of energy management. DCiM provides real-time data that supports informed decision-making in these reviews. You can present reports on energy performance and procedure compliance, which facilitates the review and strategic decision-making to improve energy efficiency
Standard point 10.1 **Conformity and corrective action.**	When non-conformities arise, DCiM allows you to identify them and take corrective actions in a timely manner. You can record non-conformities, track corrective actions, and ensure that the necessary steps are taken to address the identified issues.