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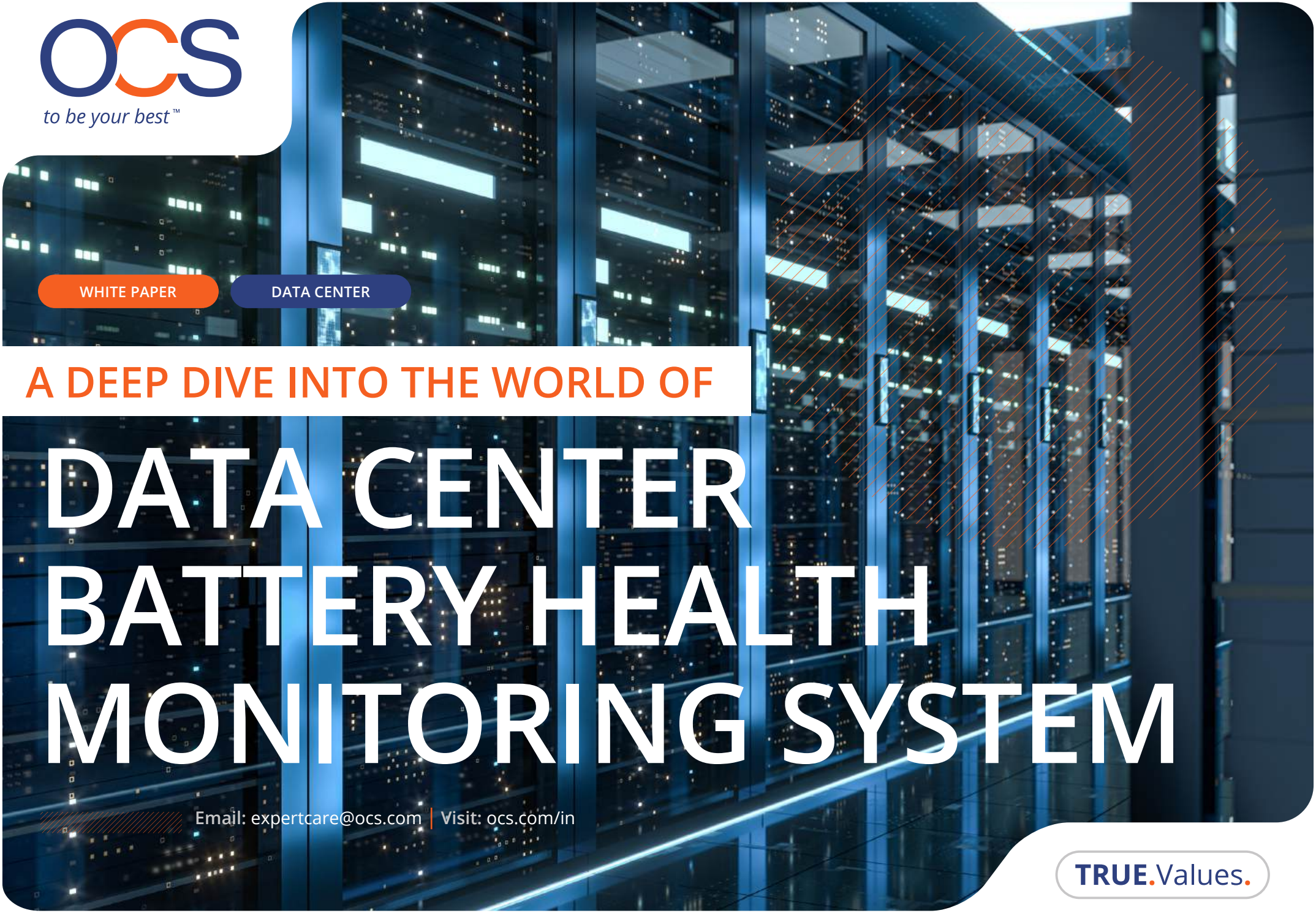

WHITE PAPER

DATA CENTER

A DEEP DIVE INTO THE WORLD OF

DATA CENTER BATTERY HEALTH MONITORING SYSTEM

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WHITE PAPER

A DEEP DIVE INTO THE WORLD

BATTERY HEALTH MONITORING SYSTEM (BHMS)

A battery health monitoring system (BHMS) consists of a sensor that is directly connected to a battery block. BHMS records and transmits battery performance data throughout the battery life cycle.

BHMS has the capability to monitor the battery performance every second and then to generate reports. This helps in predicting deterioration in battery performance and in preventing unplanned power interruptions.

THE MAJOR GOAL OF BATTERY MONITORING SYSTEM IS

- Informing users about the present condition of the battery bank.
- Inspecting the health of individual battery and predicting the balance battery life.
- Checking the failure status of the battery and sending live-notification to the administrator.
- Updating the net charge existing in the battery bank and the battery backup time.

IEEE STANDARD NUMBER AND THEIR MEANING.

1491 - 2005:

IEEE guide for selecting and using the battery monitoring equipment in stationary applications.

1188 - 2005:

IEEE recommended practice for maintenance, testing and replacement of VRLA batteries for stationary applications.

450 - 2010:

IEEE recommended practice for maintenance testing and replacement of VRLA batteries for stationary applications.

(Source: http://www.batterydaq.com/resources/nerc-prc-005-battery-maintenance-requirement)

NERC PRC - 005:

Utilities that consume, document and implement programs for the protection system which affects bulk electronic systems. Batteries such as VLA, VRLA, and NiCad are needed to be monitored, certified and tested to meet PRC-005-2 compliance.

(Source: http://www.eepowersolutions.com/products/nerc-battery-monitoring-system-prc-005-2-compliance)

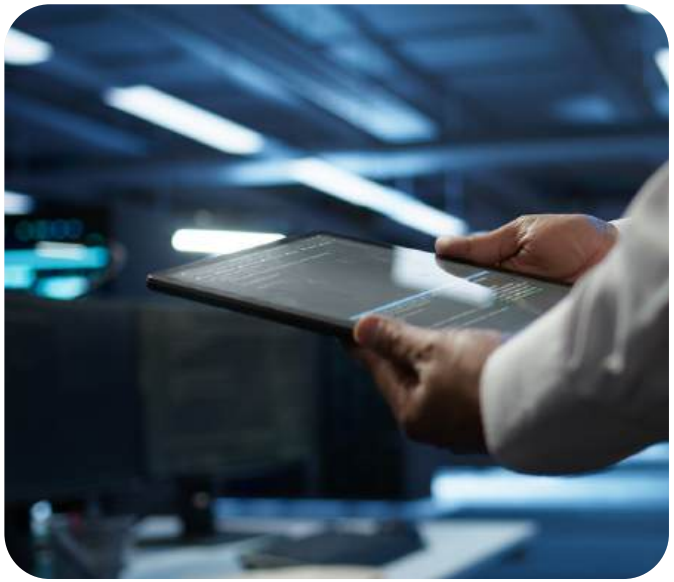
BATTERY MONITORING MARKET DRIVERS.

DEMAND FOR BATTERY MONITORING IN DATA CENTERS.

It is extremely critical for a Data Center to keep their services running and even a momentary power failure will lead to great financial losses affecting the company's reputation. More and more Data Center operators are becoming aware about how installing a battery health monitoring system can help to reduce the risk of downtime due to battery failure.

IEEE AND NERC RECOMMENDED PRACTICES FOR MONITORING

North American Electric Reliability Corporation & Institute of Electrical and Electronics Engineers are two are the largest organization. NERC's mission is to ensure the reliability and security of the bulk power system. IEEE is the technical professional organization dedicated to advancing technology for the benefit of humanity. With the practices recommended by IEEE and NERC on the monitoring system, customers will be more willing to invest in a monitoring system.



HOW BATTERY HEALTH MONITORING SYSTEM WORKS.

In a BHMS, monitoring sensors are attached to each of the battery terminals. This monitoring sensor measures individual battery cell voltage charging and discharging current. It also monitors the battery temperature. This data is transferred to a **monitoring system controller** where the data is stored.

A software translates the data received into a readable performance data. Further, the controller sends alerts to the user with alarm warnings via email and/or cell phone texts.

The **software** allows the user to access battery measurement data and historical battery data quickly and easily for a trending analysis which can also be viewed remotely.

By using a battery monitoring software, an administrator can identify problems, perform predictive analysis and generate simple & clear reports. This helps for predictive and preventive actions to be undertaken.

The time and cost of maintaining & replacing the batteries can be drastically reduced by having a battery monitoring system installed.

IMPORTANCE OF BATTERY HEALTH MONITORING.

Unpredictable Nature of Batteries.

In terms of durability, batteries are very unpredictable. Almost 3% of new batteries will fail during the warranty period. In such a scenario, any industry that relies on batteries will always want their batteries to be highly dependable. **I recommend installation of a Battery Health Monitoring System to ensure reliability and increase battery life and performance.**

- Mahesh Trivedi, Strategic Advisor to OCS Group India, Data Centers

SOME OF THE REASONS WHY BATTERY MONITORING IS CRITICAL

- Monitoring helps in avoiding downtime due to battery related issues.
- It helps to increase the life span of a battery.
- It helps to reduce battery replacement cost.
- It saves time as the battery data can be monitored remotely.
- Informed decisions can be taken using the data generated by the battery monitoring system.
- It also helps to maintain security.

In summary, in an environment where the frequency of power disruptions is high,a reliable backup battery system backed by BHMS is a must.

CONCLUSION.

A BHMS IS AN EFFECTIVE WAY OF ENSURING RELIABILITY.

Battery monitoring is essential to any industry that relies on batteries to provide backup power. Usage of battery health monitoring system helps to drastically reduce the risk of system failure due to battery related issues.

In today's world it has become obvious that battery performance cannot be taken for granted. The cost of battery failures makes battery health monitoring system an integral part of Data Center applications. Hence, there is no doubt that installing a reliable monitoring system will bring a sense of security.

As critical applications rely more on batteries for backup power, the reliability of these systems will be mission critical and hence the demand for battery monitoring system will surely increase.

Mahesh Trivedi, Strategic Advisor to OCS Group India, Data Centers.

Mahesh is a veteran with an extensive career spanning over three decades. He is a visionary who brings a wealth of experience to the data center industry. He has consistently maintained a remarkable record of near 100% uptime across all managed Data Center's.

Mahesh played a pivotal role in the conceptualisation, design, and construction of key data centers across India. Over the last decade he has advised leading Data Center players in the design, operation, and planning of mission critical facilities.

For further enquiries on Data Center Battery Health Monitoring System, please contact **Anoop Sharma** at **expertcare@ocs.com**

We provide a complimentary survey and report for Data Center Battery Health Monitoring Systems. Connect with us for developing a POC (Proof of Concept) for your data center.*

*T& C Applicable

About

OCS Group is a **£2 Bn**. company employing more than **130,000 colleagues** in **27 countries.**

We are the world's leading facilities service provider, delivering critical and essential services to support our **20,000+ customers**.

In India we have **14 branches** and **13,000 colleagues** who service **1200+ sites across India.** Our vision and mission is to become the best facilities service business in the world, making people and places the best they can be.

Through our strategic partnerships, we offer **IOT solutions, IP security and surveillance solutions, energy management, electrical safety and risk mitigation solutions.**

BATTERY HEALTH MONITORING
EXPERIENCE SINCE 2019

10,000+
Battery Sensors Installed In a Leading Global Data Center

Real Time Monitoring

Quicker RCA

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HAVE QUESTIONS ABOUT DATA CENTER BATTERY HEALTH MONITORING?

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