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Army Meter Data Management System (MDMS)

HIGHLIGHTS

>> *MDMS is Army-owned; CALIBRE-developed and maintained*

>> *CALIBRE developed the secure, enterprise level meter data collection, processing, and reporting platform for MDMS*

>> *MDMS is DIACAP approved, and maintains an Authority To Operate (ATO)*

>> *MDMS interfaces with existing Army data systems including HQIIS and AEWRS*

>> *CALIBRE's technology achievements are repeatable and fully applicable to a wide range of federal, state, commercial, and industrial enterprises*

In response to the Energy Policy Act of 2005 (EPAct 2005), Army leadership directed the Corps of Engineers to install building meters and develop an enterprise system to securely collect and analyze the meter data. When completed, detailed energy and water consumption data would help Army energy professionals better manage the consumption of limited energy and water resources.

Most military installations were originally designed to measure electricity, gas, and potable water only at incoming master meters. Resource managers and policy makers have long desired meters on individual buildings, just as utilities have done for over a century.

By placing the proposed building meters downstream from the master meters, consumption would be measured and usage patterns identified with far greater detail, and with improved accuracy.

CALIBRE successfully developed and deployed the Army Meter Data Management Systems (MDMS), and is providing Army energy managers with powerful energy and water consumption data.

CALIBRE's Offerings

>> *The Army MDMS Vision*

The Army Metering Program (AMP) was implemented to install smart meters at the building level, then securely transmit the data so it can be aggregated at the enterprise level. By using a secure user interface, Army personnel can be provided sophisticated reporting and management capabilities.

CALIBRE was contracted to develop the Army MDMS. Our challenge: Develop a first-in-kind, modified Commercial Off The Shelf (COTS), Army-owned meter data management platform to obtain and process raw meter data from a variety of sources, then deploy the comprehensive system in conformance with strict DoD Information Assurance (IA) requirements and procedures.

The DoD reviewed CALIBRE's detailed system architecture and granted the required DoD Information Assurance Certification and Accreditation Process (DIACAP) approval in 2010. With the technology and IA approvals in hand, CALIBRE deployed MDMS to pilot sites that same year. CALIBRE has since connected dozens of additional sites and
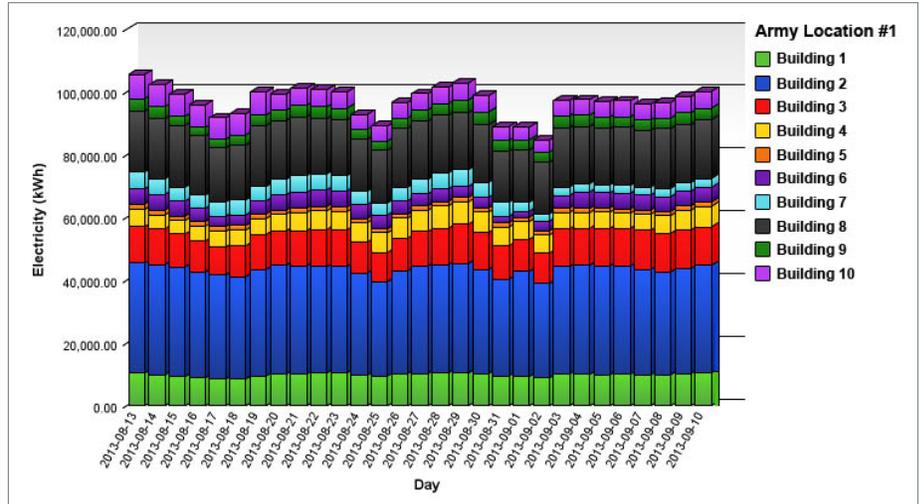
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thousands of additional meters. CALIBRE's DIACAP for MDMS was recertified in August 2013, and we continue to enhance the system's user interface and reporting tools.

>> CALIBRE's MDMS Solution

CALIBRE designed and deployed the Army MDMS to retrieve building-level meter data, and transmit it securely to an enterprise platform across the Army's Non-classified Internet Protocol Router Network (NIPRNet). This provides near real-time analysis and reporting to help achieve Army energy and water management goals. MDMS is an enterprise-wide meter data management system that provides usage information at multiple aggregation levels to monitor, measure, and assist with the effective management of energy and water consumption across the Army.

> MDMS is an enterprise-level meter data management system that promotes effective management of energy and water consumption cross the Army.

System architectures at Army sites are highly variable. CALIBRE designed MDMS with input flexibility as a key feature. There are currently three major pathways through which MDMS retrieves meter data: Directly from Smart Meters using CALIBRE-designed secure local servers; indirectly from data aggregating control system head ends via CALIBRE-designed and Army Network Enterprise Center (NEC)-hosted secure physical servers; and indirectly from utilities via intermediate Secure File Transfer Protocol (SFTP) sites. When raw meter data reaches the enterprise, our software reviews it for completeness and accuracy, and then moves it to a data warehouse where it is organized for rapid access by system users. Users enter MDMS through the Internet using a standard web browser. Entry is controlled using secure, Common Access Card (CAC) authentication for pre-authorized users. The potentially limitless number of reports now includes: consumption history, intensity normalized for square footage, intensity

normalized for weather, raw meter readings, reimbursable tenant management, and others. MDMS support services include: on-line assistance, call center support, and integral training demonstration videos that are accessible from the MDMS site.

>> MDMS Successes

Within the first weeks of fielding, MDMS identified heating and cooling systems working simultaneously in the same building. Approximately 60% energy savings were realized after Directorate of Public Works (DPW) concurrence and completion of the maintenance work order. MDMS data helped pinpoint the cause of polyphase motor failures, identified failed water valves, found hundreds of potential opportunities to setback building systems during times of low occupancy, and demonstrated the ability to remotely identify potential energy conservation measures.

The Army recognizes that it is difficult to manage that which is not measured. As CALIBRE continues to add sites and meters to the MDMS platform, measurements and the depth of the historical record continues to increase. Information from MDMS has positioned the Army to further improve energy and water management, conserve resources, and save money.

>> MDMS Enhancements

MDMS provides energy managers at all levels of the Army with unprecedented access to detailed energy and water information.

This information provides an invaluable resource to manage utility usage, reduce consumption, meet resource reduction targets, and achieve other energy and water goals. As energy managers and Army leadership continue to refine system attributes, CALIBRE continues to enhance the MDMS platform.

>> Other MDMS Applications

CALIBRE overcame many challenges and obstacles to develop a flexible MDMS system for the Army that exceeds expectations. Benefits that derive from a flexible, secure enterprise level meter reporting platform are not unique to the Army; CALIBRE's modified COTS technology is repeatable and fully applicable to a wide range of federal, state, commercial, and industrial enterprises.

ABOUT CALIBRE

CALIBRE Systems, Inc. is an employee-owned management consulting and information technology solutions company supporting government and industry. CALIBRE is committed to the success of our clients and delivers enduring solutions that solve management, technology, and program challenges.

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