MDMS *UPDATE*
~ METER DATA MANAGEMENT SYSTEM ~

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FROM THE PROGRAM MANAGER

Welcome to our April - May 2021 issue of the *Meter Data Management System Update (MDMS),* designed to keep you informed on the growth and latest developments of the Meter Data Management System and the Army Metering Program.

Our first article below discusses the increased interest in integrating external meter data into MDMS. The MDMS Program Team is working with many sites/installations on the process of importing meter data from not only Utility Privatization contracts but also from external sources, such as Building Automation Systems.

On pages 2-6 we detail the Asset Metadata module, which enables Energy Managers to enter contextual information about the buildings and meters in MDMS. There is a wealth of metadata fields to be captured and edited, such as building benchmark details for baseload, air-handling unit, lights, and chillers, as well as building details, such as building occupancy, primary function, and primary space heating source. Users can also designate whether or not the meter should be included in consumption reports for the building and/or organization.

As always, our mission is to improve the MDMS experience for end users. Your input is valuable, and we welcome your feedback via the Army Meter Service Desk (AMSD) at: usarmy.coe-huntsville.cehnc.mbx.armymeterhelp@

IMPORTING EXTERNAL METER DATA INTO MDMS

There has been increased – or perhaps renewed – interest in meter data integration into MDMS. Traditionally the interest has been in integrating the data provided by Utility Privatization (UP) contract meters. However, recently the interest has expanded to meters that are not UP but other meters that are not reporting to MDMS through an EEDRS or accredited UMCS. One such example is Fort Wainwright. They opted out of their UP contract recently but have the meters reading into their Siemens Building Automation System (BAS). They do have the ability to customize reports for export from the Siemens system and are currently working with the MDMS Program Team to get the electric meter data exported into the required .csv file format. The MDMS Team developed the MDMS Standard Meter Data Format for the UP submission process but are utilizing this same format for the non-UP submission process as well. In fact, the MDMS Program Team will most likely rename the two existing UP documents and process to simply be known as the MDMS Secure File Transfer Protocol (SFTP) process for meter integration or something similar. Once Fort Wainwright has the .csv files in the correct format, they will submit the electric meter data to the SFTP site for import into MDMS.

The MDMS Team is currently working with nine (9) additional sites/installations on the external meter data integration process in varying degrees of progress.

Ft. Leonard Wood was already submitting their UP natural gas data and now are currently testing the SFTP upload of their approved .csv files for UP water usage.

Presidio of Monterey is in the last stage of formatting their .csv file, as well as finalizing their meter naming convention.

Anniston Army Deport, Ft. Bliss, Ft. Campbell, Ft. Huachuca, Ft. Lee, Ft. Riley, USAG Miami are all in the exploratory phase at this time.

In addition, MDMS is currently importing meter data from utility privatization (UP) contractors serving Fort Myer, Fort Belvoir, Arlington National Cemetery, Fort Benning, and Picatinny Arsenal.
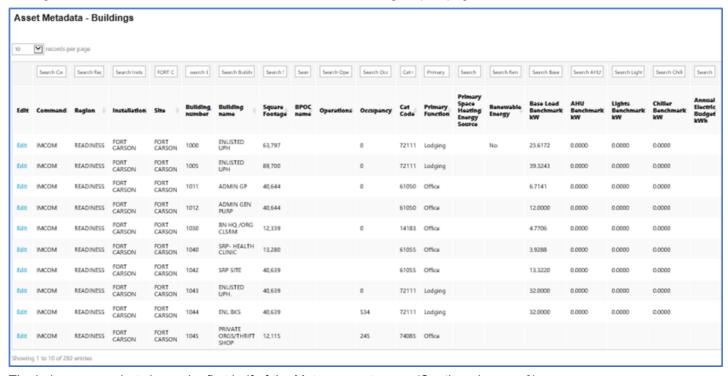
The MDMS Team is available to assist any Army Energy Manager willing to explore the possibility of acquiring meter data from their UP, BAS, or other means. If you have external meter data that you would like integrated into MDMS, reach out to the AMSD, log a ticket for assistance and the MDMS Program Team will be in touch.

ASSET METADATA

Even though the MDMS Outreach Team has highlighted the Asset Metadata module during the MDMS Overview webinars, still not many Energy Managers (EMs) realize the importance of this tool. The Asset Metadata module can be found on the Energy Management page in MDMS, with two sub-menus for entering asset metadata, Buildings and Meters. Before we dive into the details of the tool, what exactly is asset metadata? Wikipedia defines metadata as "data that provides information about other data" or "data about data." So, our module, Asset Metadata, allows EMs to enter contextual information about the buildings and meters in MDMS. Many of these fields are utilized by the reports in MDMS. For example, entering the building benchmark details for baseload, air-handling unit, lights, and chiller within the Asset Metadata module will display these values on the Interval kW benchmark report module. And vice versa, entering those values on the Interval kW benchmark report will display them in the Asset Metadata for that building.
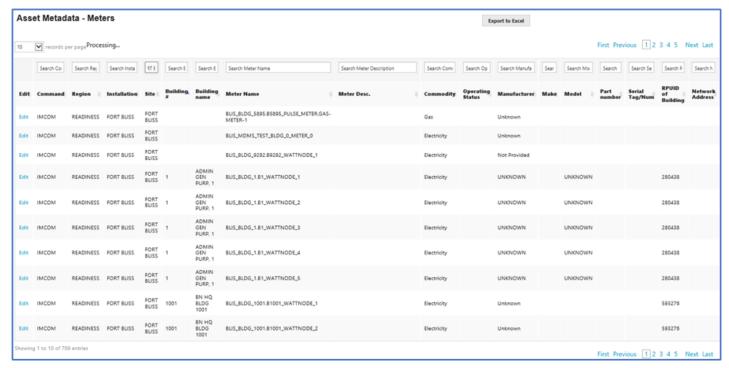
Upon selecting either the Buildings or Meters sub-menu link, MDMS automatically generates a tabular listing of asset metadata for either buildings or meters – depending on what was selected – filtered to the user's default organization. Very much like other reports in MDMS, the user can further filter the list by keying in values in any of the search fields across the top of the report. For example, EMs could search on a particular Category Code or buildings with 0 Square Footage. The below screenshot shows the first half of the Buildings report page.
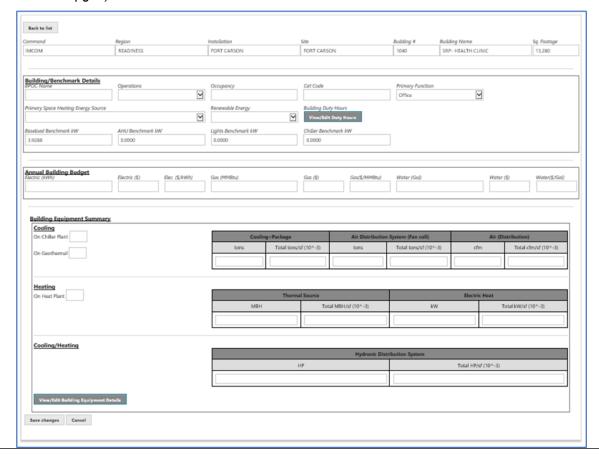
Asset Metadata - Buildings

10 records per page

	Search Co	Search Reg	Search Insta	FORT C	search I	Search Buildi	Search !	Sear	Search Ope	Search Occ	Cat	Primary	Search	Search Ren	Search Base	Search AHU	Search Light	Search Chll	Search
Edit	Command	Region	Installation	Site	Building number	Building name	Square Footage	BPOC name	Operations	Occupancy	Cat Code	Primary Function	Primary Space Heating Energy Source	Renewable Energy	Base Load Benchmark kW	AHU Benchmark kW	Lights Benchmark kW	Chiller Benchmark kW	Annual Electric Budget kWh
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1000	ENLISTED UPH	63,797			0	72111	Lodging		No	23.6172	0.0000	0.0000	0.0000	
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1005	ENLISTED UPH	89,700			0	72111	Lodging			39.3243	0.0000	0.0000	0.0000	
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1011	ADMIN GP	40,644			0	61050	Office			6.7141	0.0000	0.0000	0.0000	
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1012	ADMIN GEN PURP	40,644				61050	Office			12.0000	0.0000	0.0000	0.0000	
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1030	BN HQ /ORG CLSRM	12,339			0	14183	Office			4.7706	0.0000	0.0000	0.0000	
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1040	SRP- HEALTH CLINIC	13,280				61055	Office			3.9288	0.0000	0.0000	0.0000	
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1042	SRP SITE	40,639				61055	Office			13.3220	0.0000	0.0000	0.0000	
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1043	ENLISTED UPH.	40,639			0	72111	Lodging			32.0000	0.0000	0.0000	0.0000	
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1044	ENL BKS	40,639			534	72111	Lodging			32.0000	0.0000	0.0000	0.0000	
Edit	IMCOM	READINESS	FORT CARSON	FORT CARSON	1045	PRIVATE ORGS/THRIFT SHOP	12,115			245	74085	Office							

Showing 1 to 10 of 292 entries

The below screenshot shows the first half of the Meters report page. *(Continued on pg. 3)*

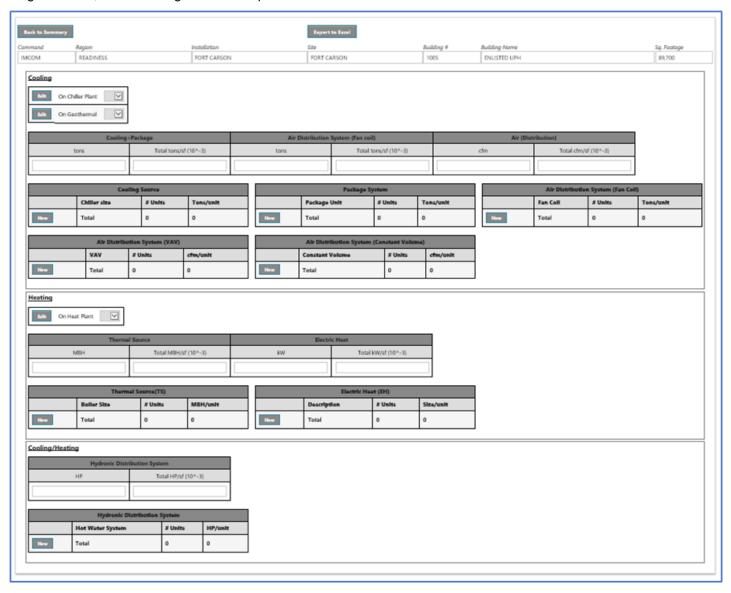## ASSET METADATA (CONT. FROM PG. 2)

The user can modify the metadata for a building or meter by selecting the blue Edit hyperlink at the far left of the row. There is a wealth of metadata fields to be captured for both buildings and meters. The Edit Building form is shown below. *(Continued on pg. 4)*
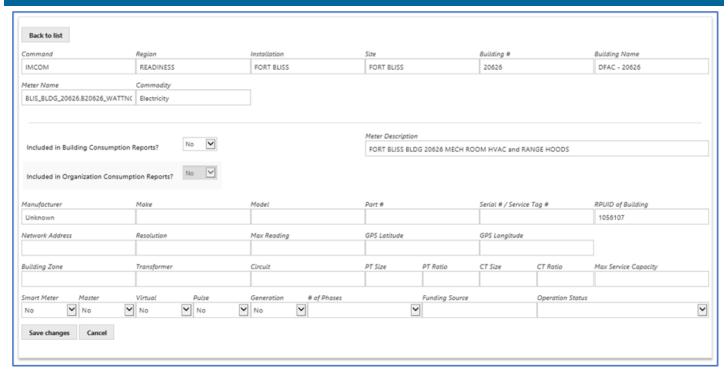
MDMS UPDATE

ASSET METADATA (CONT. FROM PG. 3)

The user has the ability to edit the building and/or benchmark details, such as building occupancy, primary function, primary space heating source, as well as view and/or edit the building's duty hours. The user can also edit/capture annual building budget information, in addition to building equipment data for cooling and heating, such as the cooling package, air distribution, or thermal source. To view and/or edit the building equipment details, the user simply selects the View/Edit Building Equipment Details to launch the below form. While the fields in the first row are display only, the rest of the form enables the user to capture data about the building's equipment, like indicate if cooling is on chiller plant or geothermal, and if heating is on a heat plant.

The Edit Meter form in shown below. The fields in the top two rows are display only. The user may capture information regarding the meter manufacturer, make, model, service tag number, and designate whether or not it is a smart, master, virtual, pulse, or generation meter. Denoting substation meters, master meters, and sub-meters prevent the problem of over-reporting. *(Continued on pg. 5)*

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ASSET METADATA (CONT. FROM PG. 4)

There are two important designation options on this form as well: whether or not the meter should be included in consumption reports for the building and/or organization. These designations have a tangible impact on reports. See the chart below for details on the effects of whether the user indicates yes or no for these two designations.

Included in Building Consumption Summary Reports?	Included in Organization Consumption Summary Reports?	Comments
No	No	If the user selects "No" for "Included in Building Consumption Summary Reports?", the "Included in Organization Consumption Reports?" dropdown is disabled and automatically populated with "No."
Yes	Yes	This selection includes the meter in both the Building and Organization Consumption Summary Reports.
Yes	No	This selection includes the meter in the Building Consumption Summary Reports but not the Organization Consumption Summary Reports.

Read on for an explanation of how these values are used.

Each meter in MDMS has been assigned a designation of standard or non-standard, and flagged for including or excluding in Building-Level and Site-Level and Above aggregated reports. Users can change the exclusions, or set up new ones, as discussed previously. Each Building-Level report only aggregates data from meters that are flagged as standard. Each Site-level and Above report only aggregates data from meters that are not excluded. See the summary table below, including the applicable scenarios for combinations of each level/indicator. *(Continued on pg. 6)*

ASSET METADATA (CONT. FROM PG. 5)

Meter Exclusion Matrix						
Building-Level		Site-Level and Above		Building-Level	Site-Level and Above	Applicable Scenario
Standard Indicator	Non-Standard Indicator	Report Exclusion Indicator	Report Inclusion Indicator	Standard / Non-Standard Indicators	Report Exclusion / Inclusion Indicators	
	X	X		Do not include meter data in building level report	Do not include meter data in site & above level reports	Submeters
X			X	Include meter data in building level report	Include meter data in site & above level reports	Most Meters
X		X		Include meter data in building level report	Do not include meter data in site & above level reports	Substations & Family Housing

The basic reason for including the meter data in the building level reports, but not in the site and above level reports, is to enable energy management on the metered asset (e.g., substation) while avoiding double counting when aggregating the consumption at the site level. Another example is family housing, the EM can do energy management on the building, but the building consumption is excluded from the Army Energy and Water Reporting System (AEWRS) reporting and therefore this data needs to be excluded when aggregating consumption totals to compare against AEWRS O&M totals. As long as the meter is not a submeter double counting against a main building meter, it will not be excluded from building level reports.

A real world use case of the importance of identifying non-standard meters occurred at Fort Bliss. Mr. Don Vincent, Fort Bliss Energy Manager, identified two dining facilities with four (4) electric meters each. The Watt node #1 meters are installed on the main switchboard representing the total electrical consumption and Watt nodes #2-4 are sub-meters connected to sub-panels under the main switchboard measuring the chiller, mechanical room and lighting panels. Without setting the meter metadata field named "Included in Building Consumption Summary Reports?" as "No" for the sub-meters, the building's reported consumption would have been overstated.

If you need assistance with this module or would like to go through the details of this report with the MDMS Outreach Team in a one-on-one WebEx session, please submit a request via the Army Meter Service Desk (AMSD) at: usarmy.coe-huntsville.cehnc.mbx.armymeterhelp@mail.mil or via the Feedback/Help Request option on the Support pulldown menu at the top right of MDMS.