



MDMS UPDATE

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FROM THE PROGRAM MANAGER

By Michael Ott, MDMS Project Manager, USACE—Huntsville Center

Welcome to our June – July 2017 issue of the *MDMS Update*. We have several important updates for you in this issue. The article below provides an update on plans for implementing the new database structure for the Meter Data Management System (MDMS) known as MDMS V2. This is a major effort involving stand-up of a new hardware architecture at the secure server hosting location managed by the Defense Information Systems Agency.

As we all know, maintaining the Army’s meter network requires a team effort. The article on “Troubleshooting Army Meter Network Outages” that begins on page 2 provides tips on how the energy manager can assist the troubleshooting effort and expedite the restoration of meter data reporting to the MDMS.

Progress continues to be made on the MDMS gateway regionalization efforts that are expected to improve meter network reliability. For more insight on the status of our regionalization activities, see the “Update on MDMS Gateway Regionalization” on page 4.

In May, we conducted our fourth training webinar, with over 100 participants again in attendance. The final two training webinars are scheduled for Europe and the Far East on dates and times more suitable for their respective time zones. Details are provided at the bottom of page 3.

As always your input is valuable, and we welcome your feedback at: usarmy.coehuntsville.cehnc.mbx.army.meterhelp@mail.mil



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MDMS V2 SCHEDULE UPDATE

MDMS version 2 will have a new database structure needed to support the growth in meter data, including renewable energy generation, as well as weather data and user tagging (explained below). Deployment of MDMS V2 will enable the following functional enhancements:

- Faulty meter data detection and quarantine tool to prevent inclusion of erroneous meter data within aggregated meter data reports
- Value Estimating and Editing (VEE) capability for filling in data gaps and replacing erroneous meter data according to Army established business rules
- Renewable energy (RE) generation reports including Army-wide statistics
- Master utility meter data reports wherever master utility meter data can be acquired from utility providers
- Enterprise Level Dashboard showing up-to-date Army-wide energy performance statistics without the need to generate reports
- Meter Data Consistency Threshold Selection Tool for finding buildings that have sufficient quantity and granularity on 15-minute meter data to support productive analysis of time-of-use and peak demand occurrences
- User-defined email alerting capability whenever a building exceeds a user-defined usage limit or experiences a network outage
- Metered Facility Tagging Capability allows energy managers to enter text data about a meter or metered building and save it within MDMS. Some tags will be standardized for querying and filtering purposes
- Incorporation of local weather data and usage report applications considering weather conditions
- Flexible Query Capability allows users to query and group facilities in multiple ways regardless of a facility’s relative position within the Army organizational structure
- Geographical Information System (GIS) Platform offering users choice of software navigation using GIS to find and select sites and buildings of interest
- Army-specific facility Energy Use Intensity (EUI) benchmarking for use in identifying facilities that consume energy above the established benchmark. The EUI benchmark comparison will take into account the predominant facility use category code, climate zone, occupancy shifts, weather and the type of construction (Continued on page 2)



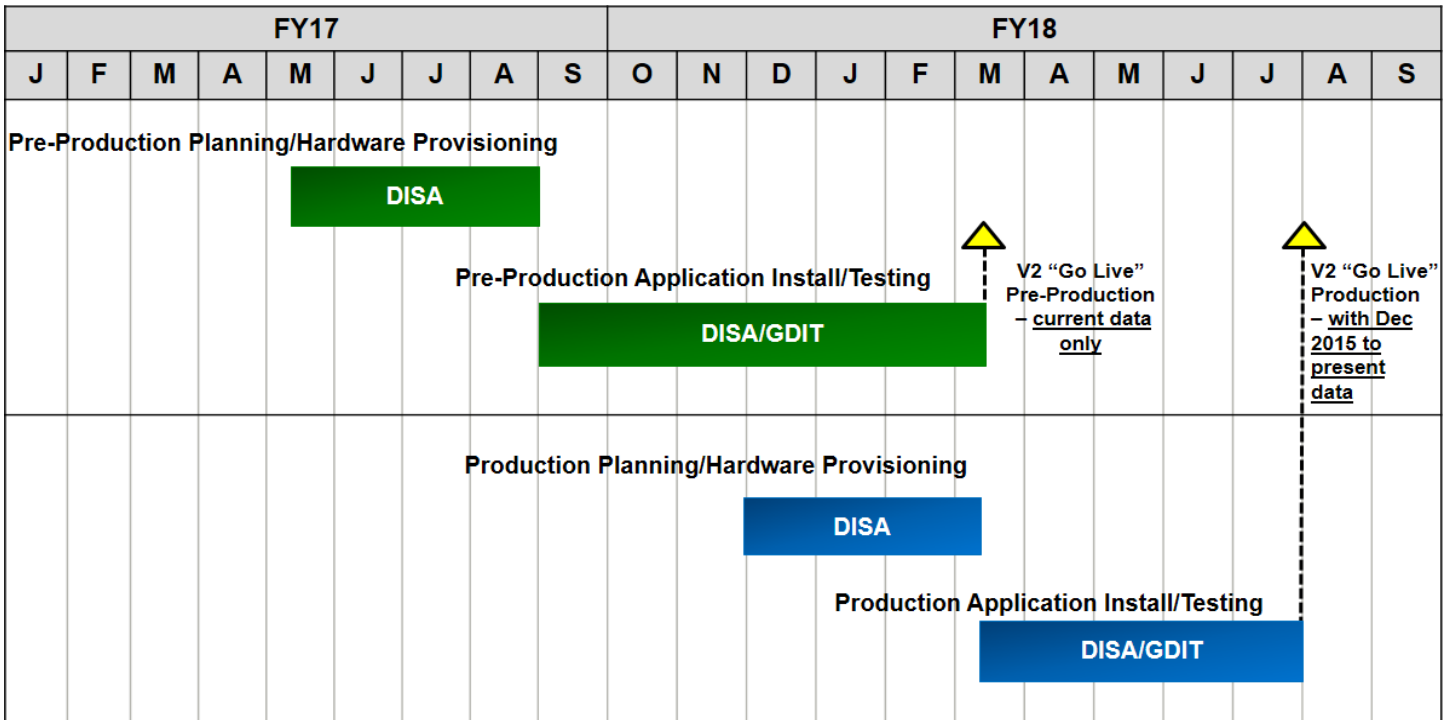
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MDMS V2 SCHEDULE UPDATE (CONT. FROM PG. 1)

- Automated tenant billing
- Usage Trending Reports that can rank buildings from the highest positive to most negative percent change in usage as compared with the same month(s) last year.

The implementation schedule for MDMS V2 is shown in the diagram below. Beta testing of MDMS V2 using the

new Pre-production environment will be offered to users beginning in March 2018. MDMS V1 will continue to be available until the Production environment “Go Live” date. Note that this is a team effort involving the Defense Information Systems Agency (DISA), the U.S. Army Corps of Engineers, Huntsville Center and the MDMS Contractor. As such, the schedule is subject to change.

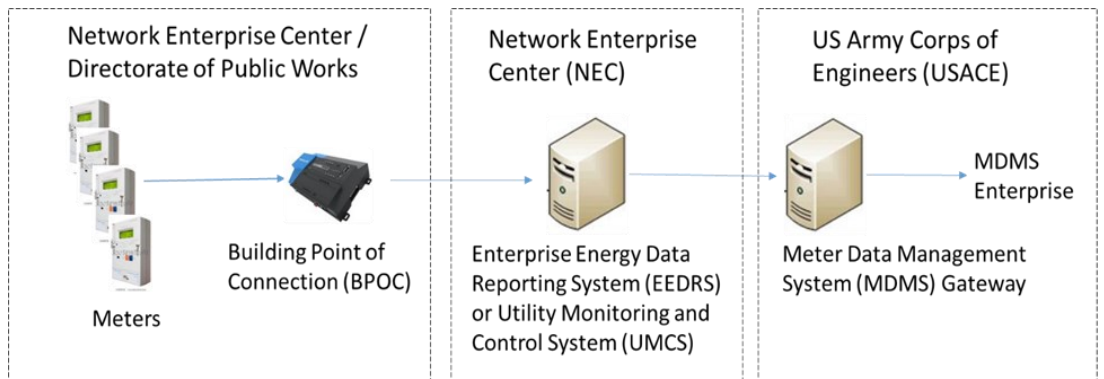


TROUBLESHOOTING ARMY METER NETWORK OUTAGES

Maintaining the Army’s meter network requires a team effort. This article provides tips on how the installation Energy Manager can assist the troubleshooting effort and expedite the restoration of meter data reporting to the Meter Data Management System.

Analogous to a three-link chain, the Directorate of Public Works (DPW), the Network Enterprise Center and U.S. Army Corps of Engineers each have operations and maintenance responsibility for their respective parts of the Army’s network that connects a building’s meter to the enterprise MDMS. Cybersecurity requirements limit each party’s access and visibility for troubleshooting the source of a network failure to their respective area of O&M responsibility. The DPW energy manager can assist the troubleshooting effort and by doing so, help expedite the restoration of meter data reporting to the MDMS.

The first indication for a meter outage is obtainable from the meter status roll-up within MDMS. By clicking on the site name, the meter status roll-up page provides drill-down capability to each meter that is assigned to a site. *(Continued on pg.3)*



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TROUBLESHOOTING ARMY METER NETWORK OUTAGES (CONT. FROM PG. 2)

This drill-down capability quickly identifies which meters are off-line and includes the “Most Recent” date/time stamp. Note: This drill-down report is called the “Meter status details” and can be launched separately by navigating to Reports >> Meter status details.

When looking at the “Most Recent” date/time stamp, there are some important deductions that can be made.

Typically, when all or most of the meters at a site share the same “Most Recent” date/time stamp, the connection failure is associated with the MDMS gateway or its data source. The data source is a locally hosted server used to consolidate meter data for transfer to the MDMS gateway. That server is called Enterprise Energy Data Reporting System (EEDRS). At some installations, a Utility Monitoring and Control System (UMCS) server functions as the meter data source for the MDMS gateway.

If the outage is associated with the MDMS data source and the MDMS Gateway server cannot communicate with EEDRS/UMCS, the status on the meter status roll-up will show “*MDMS operational. No recent meter data available from data source.*” If you see this for your site, check to see if meter data is reporting to EEDRS or UMCS after the “Most Recent” date/time stamp shown in MDMS. You can check this by logging into the energy manager’s EEDRS/UMCS workstation. If meter data exists at a later date than MDMS, the MDMS contractor has the action to investigate, troubleshoot and resolve the MDMS Gateway server and/or its interface with the EEDRS. If EEDRS has also stopped recording meter data about the same time as shown within the MDMS meter status dashboard, the problem most likely resides within or downstream from the EEDRS. Although the NEC has system admin responsibility for EEDRS, the U.S. Army Engineering and Support Center, Huntsville can also provide qualified technicians to assist the NEC in troubleshooting EEDRS connectivity problems.

Troubleshooting the loss of connection downstream from the EEDRS, i.e., at the building point of connection (BPOC), or the meter itself requires a little more investigation. One of the biggest indicators of a BPOC issue is when every meter associated with the building went offline at the same time and have the same “Last Reported” date/time stamp. Copy down the building number where the meters are installed (part of the meter

name), go to the building and locate the BPOC, usually in the network communications storage room/closet. Once you have located the device, power cycle (power-off and back on again) to re-set the BPOC to attempt a connectivity restore. While there, physically trace the network cable on the BPOC to the network switch it’s plugged into and record both the switch and port number. Note: If it isn’t plugged into anything, you may have found the problem — contact your NEC!

After the power cycle reset of the BPOC, check the EEDRS/UMCS workstation again to see if that restored connectivity. If it did, you should see the change within MDMS within 2-3 hours. If that did not do the trick, the next step would be to confirm that the BPOC is on the correct local energy network with the local NEC. This step is very important and quite possibly the issue at hand, if both the physical connection has been confirmed and power cycling the devices and/or meters doesn’t restore connectivity. Upon contacting the NEC, they will likely ask you for the switch and port number you copied down. The NEC should be able to reconfigure the switch/port with the correct local energy network and it should restore connectivity. If the NEC has confirmed that the specific device is on the correct local energy network and meter data is still not flowing “upstream” to the EEDRS/UMCS or MDMS data source, the other possibility is that the EEDRS/UMCS is not configured to communicate with the particular meter device(s) or a larger network issue has occurred. This would also require communication with your NEC and potentially the meter integrator or EEDRS/UMCS support vendor.

While this article focuses on various ways the DPW energy manager can assist the troubleshooting efforts and expedite the restoration of meter data reporting to the MDMS, additional technical procedures, tips and lessons learned materials can be found on the Army Meter Service Desk (<https://army.deps.mil/NETCOM/EEDRS/SitePages/AMSD.aspx>) and EEDRS (<https://army.deps.mil/NETCOM/EEDRS/default.aspx>) websites. One particular technical white paper of interest (found on the EEDRS website), “Information Technology & Network Support AMP Lifecycle Management and Lessons Learned” provides information on post-implementation roles and responsibilities, program portals and points of contact for additional information, as well as troubleshooting lessons learned.

WEBINARS SCHEDULED FOR EUROPE & FAR EAST

The MDMS training webinars for Europe and the Far East have been scheduled! Europe is scheduled for Wednesday, 12 July 2017 at 0800 EDT, and the Far East is scheduled for Thursday, 7 September 2017 at 2000 EDT. Mark your calendars if you are located in either of these regions. The invitation for the 12 July 2017 webinar has gone out already. If you did not receive the webinar invite and would like to attend, please contact the AMSD help desk at

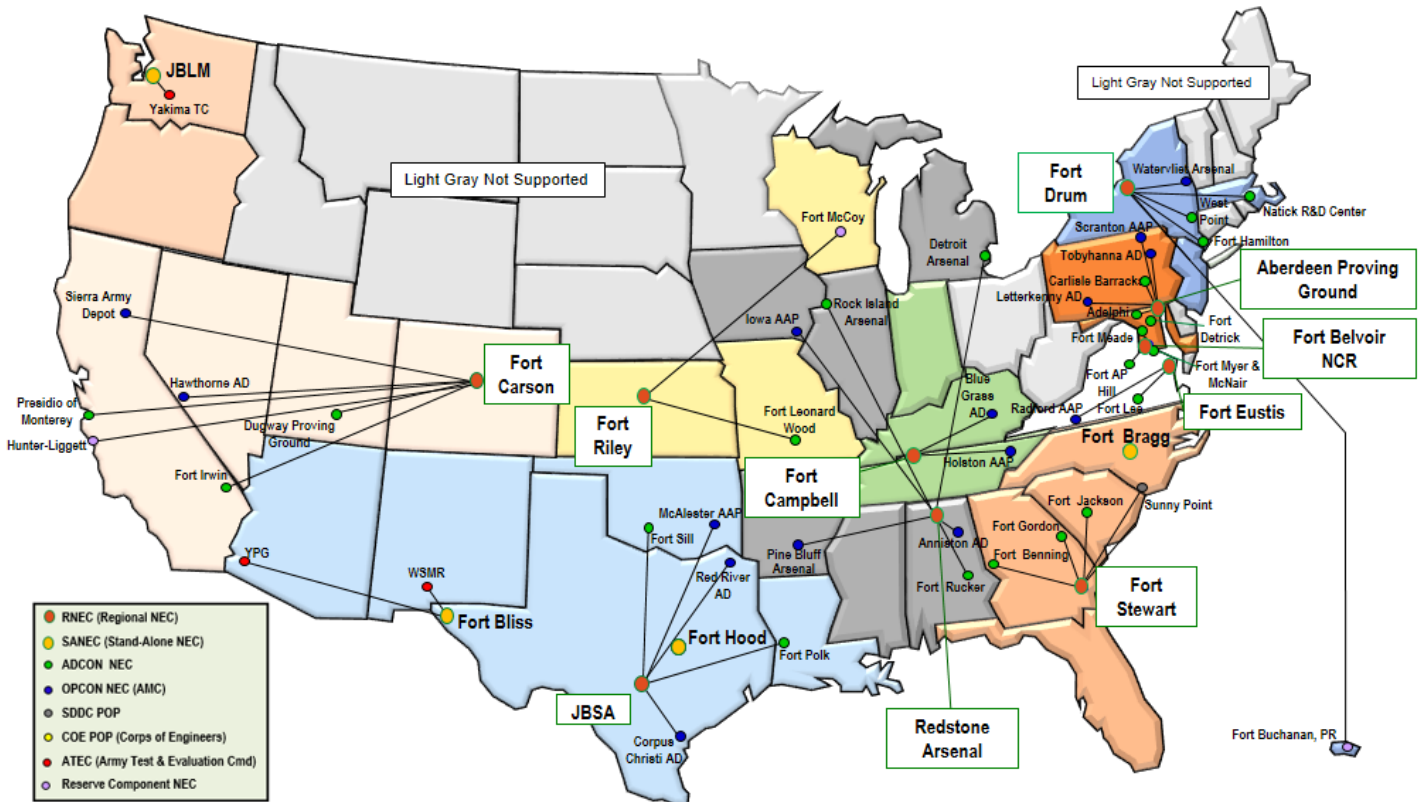
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UPDATE ON MDMS GATEWAY REGIONALIZATION

Regionalization of the Network Enterprise Centers (NECs) should improve reliability of the Army’s meter network. At least one MDMS gateway server per installation/site currently collects and transmits meter data to the enterprise MDMS. The figure below shows the regionalization plan that will enable a single MDMS gateway to obtain meter data from multiple sites thereby greatly reducing the number of gateway servers requiring maintenance. The end state will be 12 regional NECs. Fewer NECs will streamline the coordination between the MDMS team and the responsible NEC when troubleshooting meter network outages. Hardware and software upgrades are also being implemented.



The MDMS team is working with NETCOM engineers as well as Regional Cyber Centers (RCC), Joint Regional Security Stacks (JRSS) and local NEC personnel to make the required changes to Ports and Protocols Services (PPS). Once implemented, the PPS changes will re-direct the meter data transmission from each site’s Enterprise Energy Data Reporting System (EEDRS), or accredited Utility Monitoring and Control System to the new appropriate regional MDMS gateway.

The chart (at right) shows the regionalization end-state and completion status as of 22 June 2017.

MID ATLANTIC REGION Aberdeen Proving Ground (RNEC) Carlisle Barracks Fort Detrick (IMCOM) & Forest Glen Adelphi Laboratory Center Letterkenny Army Depot Tobyhanna Army Depot Scranton Army Ammunition Plant	NORTHEAST REGION Fort Drum (RNEC) Fort Hamilton Natick Soldier Systems Center West Point USMA Fort Buchanan Watervliet Arsenal	SOUTHWEST REGION Joint Base San Antonio (JBSA) Fort Polk Fort Sill Corpus Christi Army Depot McAlester AAP/Plant Red River Army Depot
NATIONAL CAPITAL REGION Fort Belvoir (RNEC) Fort A P Hill Fort McNair Fort Myer Fort Meade	SOUTH ATLANTIC REGION Fort Eustis (JBLE) (RNEC) Fort Lee Radford AAP (at ALTESS)	CENTRAL REGION Redstone Arsenal (RNEC) Detroit Arsenal Fort Rucker Anniston Army Depot Pine Bluff Arsenal Rock Island Arsenal (Temp Regional) Iowa Army Ammunition Plant
FORT BLISS REGION Fort Bliss (SANEC) White Sands Missile Range Yuma Proving Ground	SOUTHEAST REGION Fort Stewart (RNEC) Fort Jackson Fort Gordon (Temp Regional) Fort Gillem MOT Sunny Point Fort Benning	BLUEGRASS REGION Fort Campbell (RNEC) Bluegrass Army Depot Holston
WEST REGION Fort Carson (RNEC) Fort Irwin Dugway Proving Ground Presidio of Monterey Fort Hunter Liggett Hawthorne Army Depot Sierra Army Depot	MIDWEST REGION Fort Riley (RNEC) Fort Leonard Wood Fort McCoy	JOINT BASE LEWIS MCCORD (JBLM) Joint Base Lewis-McChord (SANEC) Yakima Training Center

←← (Green) Denotes PPS and Integration Complete