Meter Data Acquisition (MDAS)

- AMR data collection from system meters (DT and Feeder etc)
- AMR data collection from HT/selective LT consumers meter
- Provide all meter data at central data centre
- Providing different summary and analysis reports
Architecture for MDAS

Central Data Centre

MDAS Application

S/Stn system with DCU/Modem

DT & Consumer Meter with modem
MDAS integration with other service providers

GIS-CIAM (Information)
CC&B (Information)
WAM (Information)
Identity management IDMS (Information)

Network Information
Consumer Information
Asset Info.
User rights

Meter Data Acquisition System (MDAS)

Pre-requisites
Pre-requisites provided by NSP
Acquired meter data

Meter (resource)
GPRS Cloud (resource)
Energy Audit (Information)

Acquired Meter Data (Outcome)
MIS reports (Outcome)

GIS-CIAM: GIS-based Consumer Indexing & Asset Mapping
MBC: Metering, Billing & Collection
AM: Asset Management
MDAS: Meter Data Acquisition System
Energy Audit Integration

Central Data Centre

GIS-CIAM
- Network details, consumer/meter mapping & device hierarchy

GIS-INAM
- Load Flow Results

Oracle-MBC
- Consumer details, billing & payment data

Oracle AM
- System meter info, meter CT/PT details

Enerlyser (Energy Audit Module)
- Perform Substation Mismatch
- Perform LT&HT Network Loss
- Calculate AT&C Loss

MDAS: Meter Data Acquisition System

GIS-CIAM: GIS-based Consumer Indexing & Asset Mapping
GIS-INAM: GIS-based Integrated Network Analysis Module
MBC: Metering, Billing & Collection
AM: Asset Management
MDAS: Meter Data Acquisition System
Data required for MDAS

There are some major requirements of data for MDAS:

- Meter Installation on DT/HT and Feeder
- Modem and DCU installation on DT/HT and feeder respectively
- GIS Mapping of the Different levels of electrical Hierarchy present at field and Migration of the same in MDAS solution from GIS
- Migration of the Meter of DT and Feeder from GIS
- Migration HT Consumer Meters From CCB
- Billing and Payment data for all the consumers to be migrated to MDAS on Monthly basis
Processing at MDAS

Activity performed at MDAS

- Synchronization of Meter – Modem, Feeder – DCU installed at field
- Synchronization of GIS Mapping and Metering details with MDAS
- Synchronization of Billing and Payment data for the Consumer with MDAS
- Displaying the reading data at data viewer and data reports
- Processing of the Meter Data for Calculation of data availability
- Study Processing for generation of AT&C and MIS (Health) Reports for study period
- Furnishing different reports for Status and Corrective action
- Synchronizing Billing data to CCB for HV and MRI consumers read through AMR and MRI for further billing purpose
# Reports available at MDAS

<table>
<thead>
<tr>
<th>Report type</th>
<th>Reports</th>
<th>Purpose of reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT&amp;C reports</td>
<td>Project area wise AT&amp;C loss reports</td>
<td>Report Show the AT&amp;C loss for Study period of the month of the project area wise</td>
</tr>
<tr>
<td>AT&amp;C reports</td>
<td>Project area wise and level wise AT&amp;C loss reports</td>
<td>Report Show the AT&amp;C loss for Study period of the month of the Project area wise-level wise</td>
</tr>
<tr>
<td>AT&amp;C reports</td>
<td>Billing and Payment report</td>
<td>Billing and Payment report accumulated in the month of the AT&amp;C loss</td>
</tr>
<tr>
<td>AT&amp;C reports</td>
<td>Project area wise Billing and Payment report</td>
<td>Billing and Payment report accumulated in the month of the AT&amp;C loss</td>
</tr>
<tr>
<td>AMR-MRI Consumer Status</td>
<td>901</td>
<td>To get the details Success/ fail of the File received at MDAS for Hv-CMRI Consumer meter and its saving ,export to CCB</td>
</tr>
<tr>
<td>MRI file rejection Status</td>
<td>902</td>
<td>To get the details failed MRI files of the</td>
</tr>
<tr>
<td>Modem- Meter Connectivity reports</td>
<td>No_Ping_Since_Last_2_Days</td>
<td>To get the details of the Modems not pinging from last two days</td>
</tr>
<tr>
<td>Modem- Meter Connectivity reports</td>
<td>No_Read_Since_Last_2_Days</td>
<td>To get the details of the Modems not read from last two days</td>
</tr>
<tr>
<td>Metering node</td>
<td>600</td>
<td>To get the details of the meters migrated in MDAS for all category</td>
</tr>
</tbody>
</table>
# Reports available at MDAS

<table>
<thead>
<tr>
<th>Report type</th>
<th>Reports</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Monthly analysis reports</td>
<td>AMR Consumer Instantaneous exception</td>
<td>To check instantaneous exception of the metering condition of HV consumer</td>
</tr>
<tr>
<td>Monthly analysis reports</td>
<td>AMR Read System Meters Instantaneous Data Exception Report</td>
<td>To check instantaneous exception of the metering condition of DT</td>
</tr>
<tr>
<td>Monthly analysis reports</td>
<td>MIS Report of Distribution Feeder</td>
<td>To get the monthly analysis of the health of the Feeder</td>
</tr>
<tr>
<td>Monthly analysis reports</td>
<td>MIS Report of Distribution Transformer</td>
<td>To get the monthly analysis of the health of the DT</td>
</tr>
<tr>
<td>Monthly analysis reports</td>
<td>MIS Report of Overloaded DT</td>
<td>To get the monthly analysis of the overloading of the DT</td>
</tr>
<tr>
<td>Monthly analysis reports</td>
<td>MIS Report of Underloaded Distribution Transformer</td>
<td>To get the monthly analysis of the Underloading of the DT</td>
</tr>
<tr>
<td>Monthly analysis reports</td>
<td>Operation and Reliability Report</td>
<td>To get the monthly analysis of the operation of the DT</td>
</tr>
<tr>
<td>Monthly analysis reports</td>
<td>Substationwise DT's Unbalancing Report</td>
<td>To get the monthly analysis of the current based unbalancing of the DT</td>
</tr>
</tbody>
</table>
Process flow MRI reading

✓ Reading data collection of consumer at Division/Subdivision level
✓ Uploading the reading data in desired format in Auto upload utility folder
✓ Files receiving at common drive
✓ Moving and processing of files at MDAS server
✓ Billing data populated to CCB from MDAS through billing request flow for further bill generation purpose at CCB end
REPORTS FOR THE FILES RECEIVED

✅ 901
This report gives the status of success of Files received at MDAS.

✅ 902
This report gives the status of failure of Files received at MDAS.

Navigation: MDAS-> Global->Reports->excel reports-901, 902
<table>
<thead>
<tr>
<th>Meter No.</th>
<th>Meter Manufacturer</th>
<th>Consumer No.</th>
<th>Consumer Type</th>
<th>File Name</th>
<th>Reading Files Received at MDAS</th>
<th>Reading Source Type</th>
<th>Heading</th>
<th>Heading File Save to MDAS Status</th>
<th>Reading File Processing Date</th>
<th>Billing Data Export Status</th>
<th>Billing Data Failure IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>02056330</td>
<td>LNT</td>
<td>2621293000</td>
<td>Non-HV</td>
<td>7115_2019_12_26_21L_T1_MVV</td>
<td>Yes</td>
<td>MIIR</td>
<td>Success</td>
<td>03/06/2019</td>
<td>Fail</td>
<td>CMIR consumer Meter re</td>
<td></td>
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<tr>
<td>02056340</td>
<td>LNT</td>
<td>4656614000</td>
<td>Non-HV</td>
<td>11112019_12_26_21L_T1_MVV</td>
<td>Yes</td>
<td>MIIR</td>
<td>Success</td>
<td>03/06/2019</td>
<td>Fail</td>
<td>Maximum Apparent Dem parameters not available</td>
<td></td>
</tr>
<tr>
<td>02056311</td>
<td>LNT</td>
<td>378442000</td>
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<td>2115_2015_06_05_32_L1_MVV</td>
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<td>MIIR</td>
<td>Success</td>
<td>12/06/2015</td>
<td>Fail</td>
<td>Maximum Apparent Dem parameters not available</td>
<td></td>
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<tr>
<td>02056487</td>
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<td>8630242000</td>
<td>Non-HV</td>
<td>2115_2015_06_05_32_L1_MVV</td>
<td>Yes</td>
<td>MIIR</td>
<td>Success</td>
<td>12/06/2015</td>
<td>Fail</td>
<td>Maximum Apparent Dem parameters not available</td>
<td></td>
</tr>
<tr>
<td>02056499</td>
<td>LNT</td>
<td>5740142000</td>
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<td>2115_2015_06_05_32_L1_MVV</td>
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<td>MIIR</td>
<td>Success</td>
<td>12/06/2015</td>
<td>Fail</td>
<td>Maximum Apparent Dem parameters not available</td>
<td></td>
</tr>
<tr>
<td>02056504</td>
<td>LNT</td>
<td>5258042000</td>
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<td>Yes</td>
<td>MIIR</td>
<td>Success</td>
<td>09/06/2015</td>
<td>Fail</td>
<td>Not Requested for Billing</td>
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</tr>
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<td>Yes</td>
<td>MIIR</td>
<td>Success</td>
<td>09/06/2015</td>
<td>Fail</td>
<td>Not Requested for Billing</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- MIIR: Monthly In-Place Reading
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Major Problem Faced in HV -CMRI Consumers

There are some major problems faced by users in HV-CMRI

Modem reading (AMR) and MRI reading
- Modem /Meter not working
- Meter changed at site
- Meter not updated in CCB and MDAS
- Meter not migrated to MDAS
- Wrong meter number migrated
- Wrong meter make migrated
- MRD/ XML file corrupt
- File transfer issue
- File not moving issue
Change Management
Data required for MDAS

There are some change requirement data for MDAS from GIS/Utility

- Capacity change of the transformers
- MF change of the Meters
- Meter Change
- Modem Change
- Consumer Category updation
- Consumers updation DT
THANK YOU