

# ROADMAP TO UTILITY OPERATIONAL EXCELLENCE

*The Metro-CIS way of maximizing your SAP investment*



December 28, 2010



# Business Problems

- Network failure is not predicted accurately enough to avoid unnecessary outages
- Inefficiently responding to outages leads to unnecessarily long periods of power loss
  - Customer dissatisfaction
  - Not meeting regulator SLA's
- During outages poor customer communication leads to customer dissatisfaction
- Poor understanding of customer (e.g. Life support machines on premise) leads to highly public mistakes with big legal and human consequences
- Areas of poor network efficiency (technical losses) are not monitored and so not fixed in a timely manner

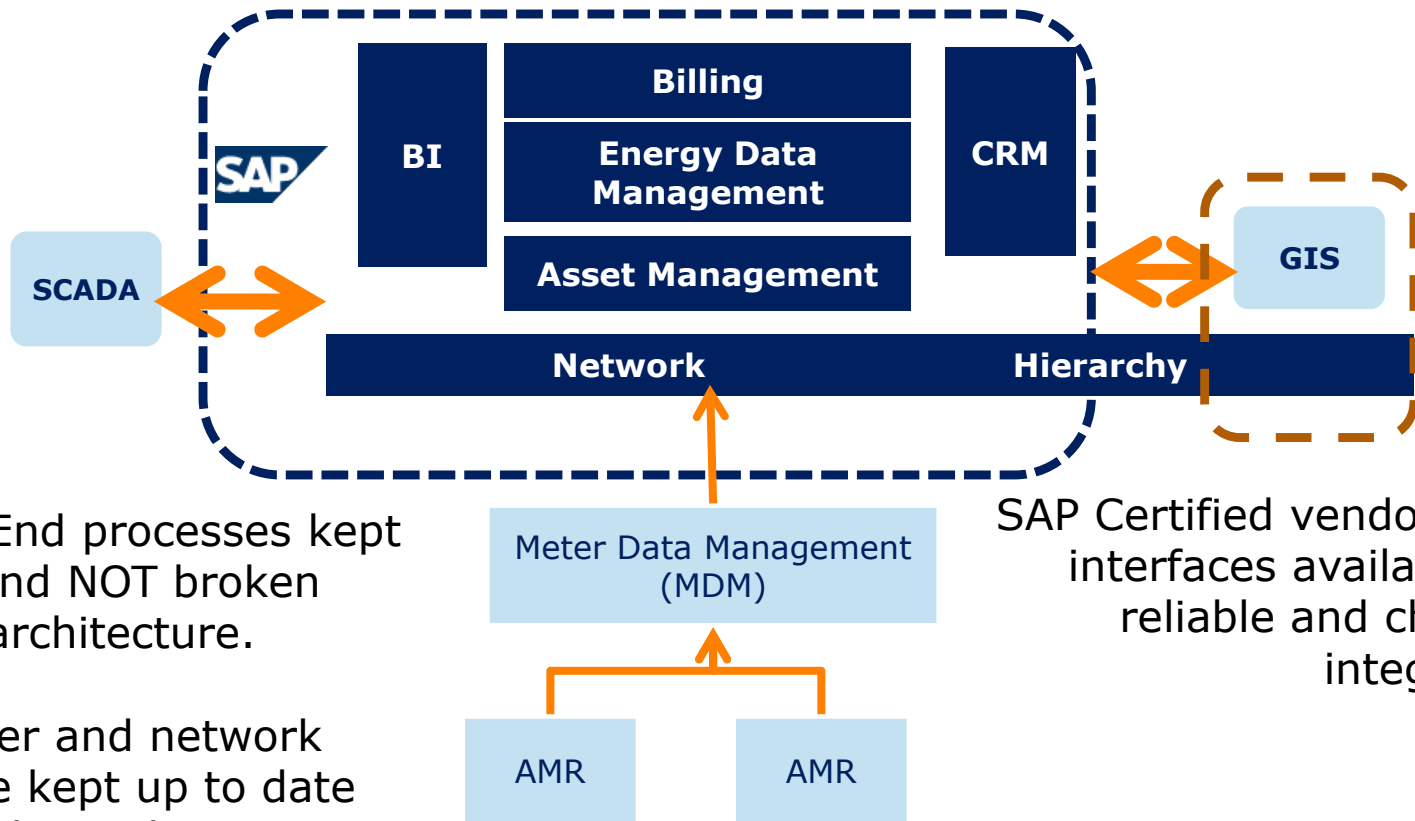


# Normal Resolution

- Best of breed utility solutions leading to high TCO
  - Expensive software acquisition costs
  - Integration costs and technical complexity high
- But more importantly results in sub-par operational performance
  - Outage processes are broken between call center and work crews
  - Outage and work management solutions don't integrate
  - Applications become out of synch with real world since asset management and GIS are not updated during emergencies
  - Network information out of synch with real world leads to ineffective systems and processes
- Different systems to deliver operational best practice
  - SAP for Asset Management
  - Separate OMS and or DMS
  - AMI architecture does not consider asset management or customer billing/interaction



# Our Approach to Utility Operational Excellence (maximizing SAP investment)



End to End processes kept whole and NOT broken across architecture.

Customer and network data are kept up to date on a real time basis enabling best in class business performance

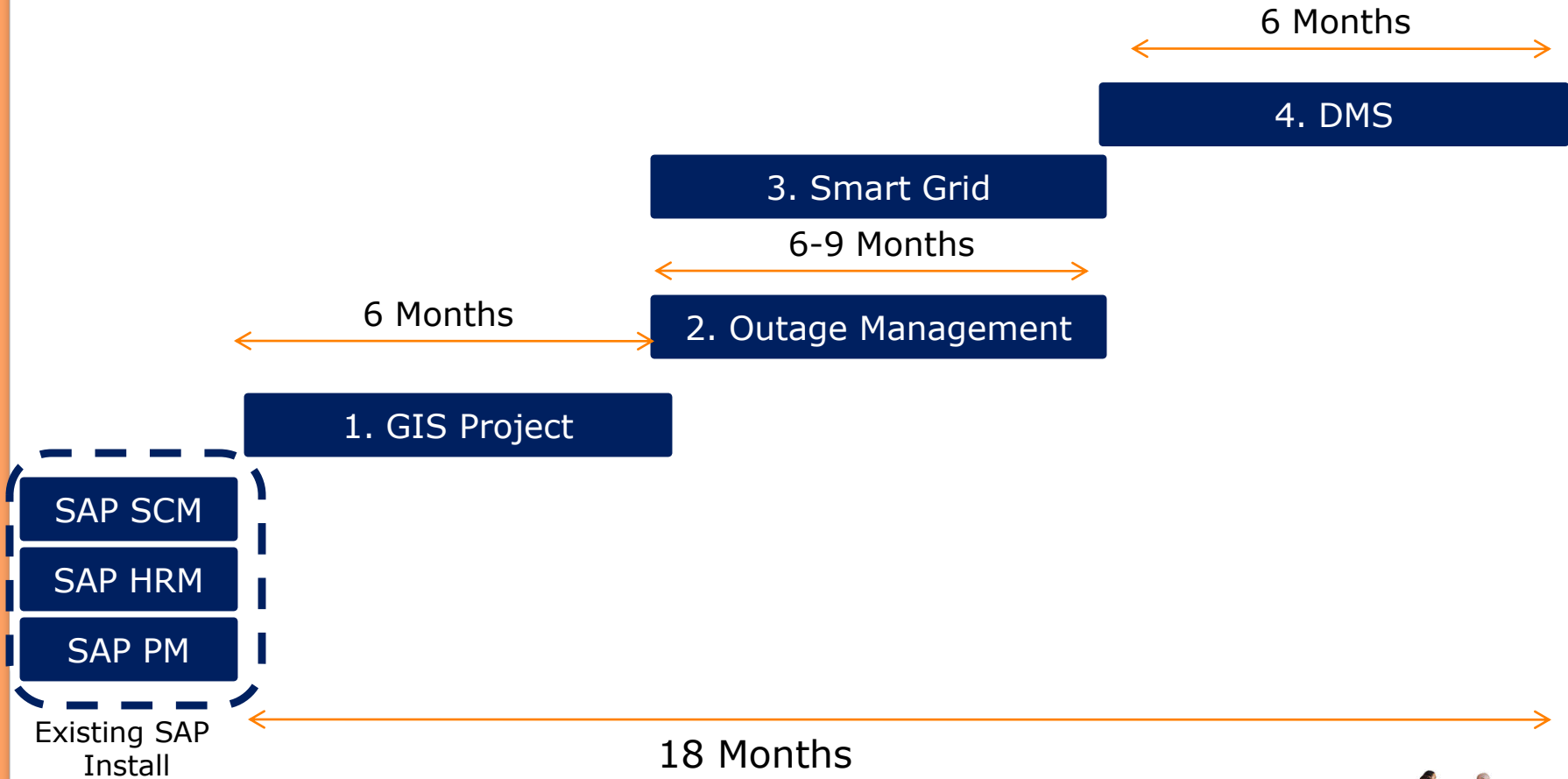
SAP Certified vendors and interfaces available for reliable and cheaper integration



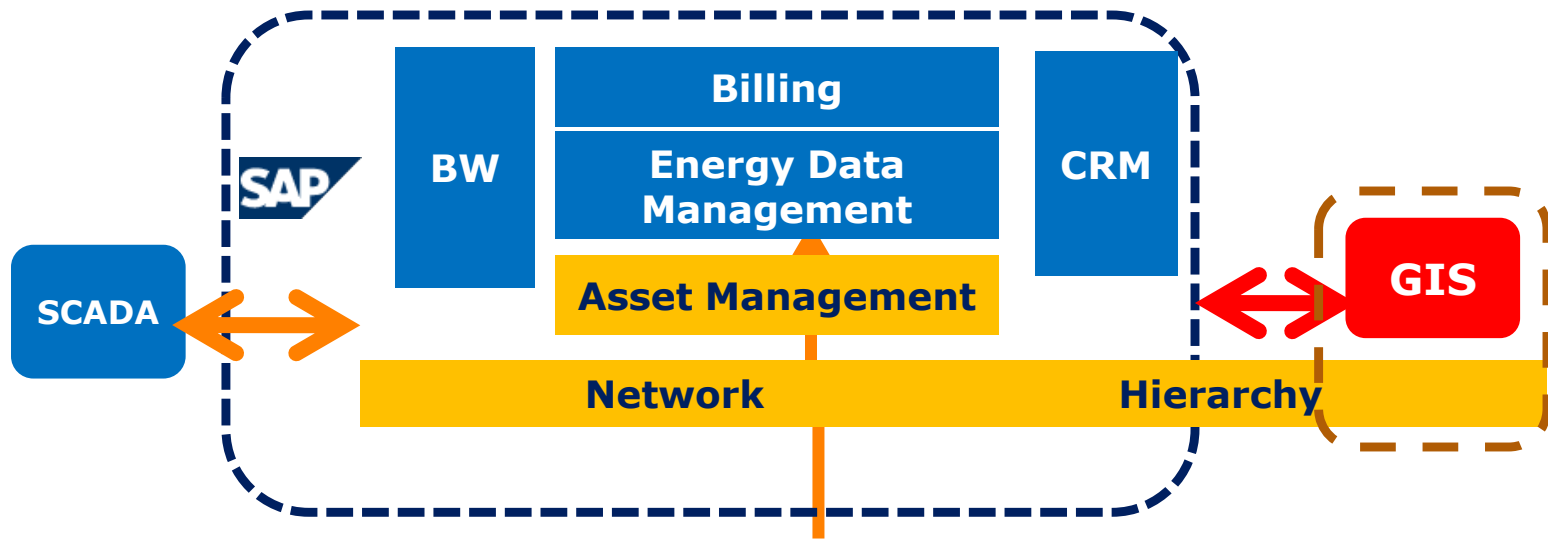
AMR= Automatic Meter Reader



# Operational Excellence Roadmap



# 1. GIS-Front End to Asset Management



Metro-CIS design uses the GIS interface as the front end for the network operations center

***All network changes in the field are recorded in ops center as they happen helped by the ease of use***


Metro-CIS has designed interfaces from Open Source GIS and certified GIS vendors to SAP Asset Management.

***SAP Asset Management and GIS kept in synch with real world!***



 Existing Apps used in scope

 New Work for Project

 Out of Scope for Project

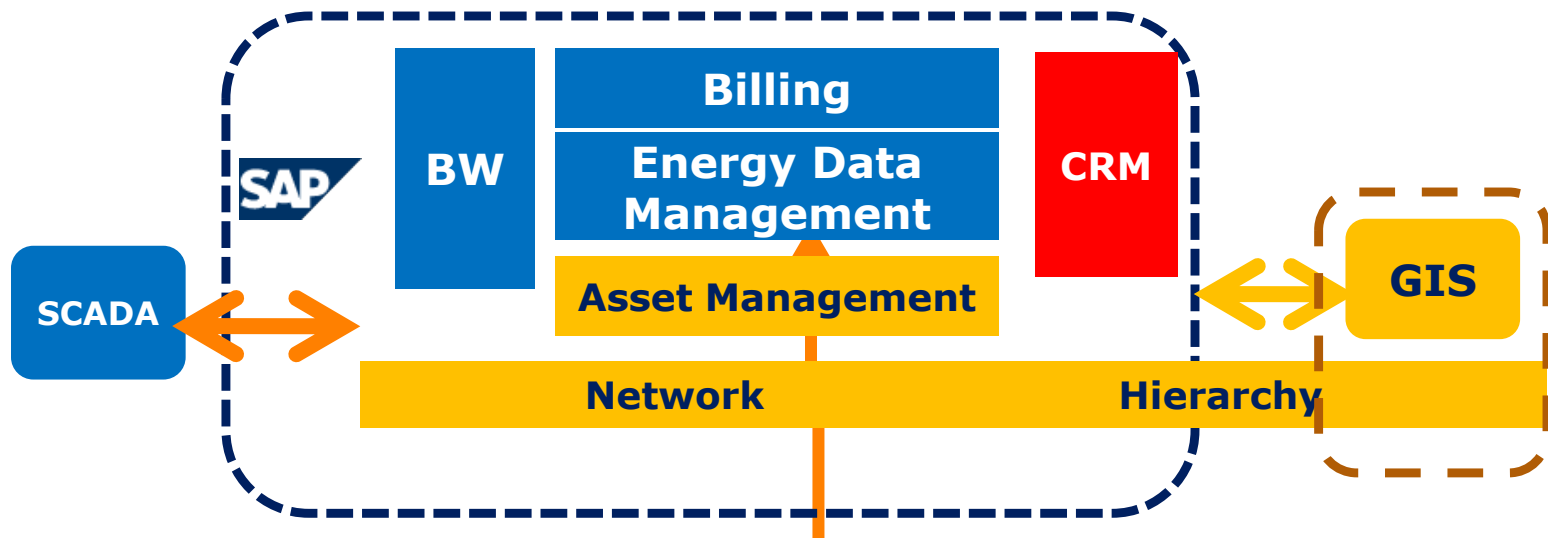


# Network 100% Accurate

- Representing the network accurately in SAP PM does more than just improving the efficiency of Asset Management
- An accurate PM Hierarchy in SAP facilitates:
  - Accurate Spatial view in GIS of complete network
  - Meter reads from AMR customer meters and network sensors to be used to perform
    - Network load balancing every 15-30 minutes
    - Identify technical losses early to avoid unnecessary wastage
    - Identify areas of commercial loss for revenue protection
- Ensure 100% of network is in PM hierarchy
- Provide engineers the network spatial view with GIS solution integrated with SAP PM
- Network kept up to date by providing user friendly systems and processes to ensure all network changes are recorded in SAP as they occur
  - Mobile apps like Click or GuiXT for mobile work confirmations
  - Using GIS as the front end for the ops call centre to record all



## 2. Outage Management Solution



SAP CRM is implemented into the central customer contact center as well as the operations call center.

CRM and GIS integrated to identify customer location and other customers affected.

Customers are proactively notified of outage by CRM SMS or calls


Notifications and work orders are created in SAP PM and crews dispatched to outage

Work confirmed in GIS solution as completed in field by operations call center team.



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# EDM over MDM

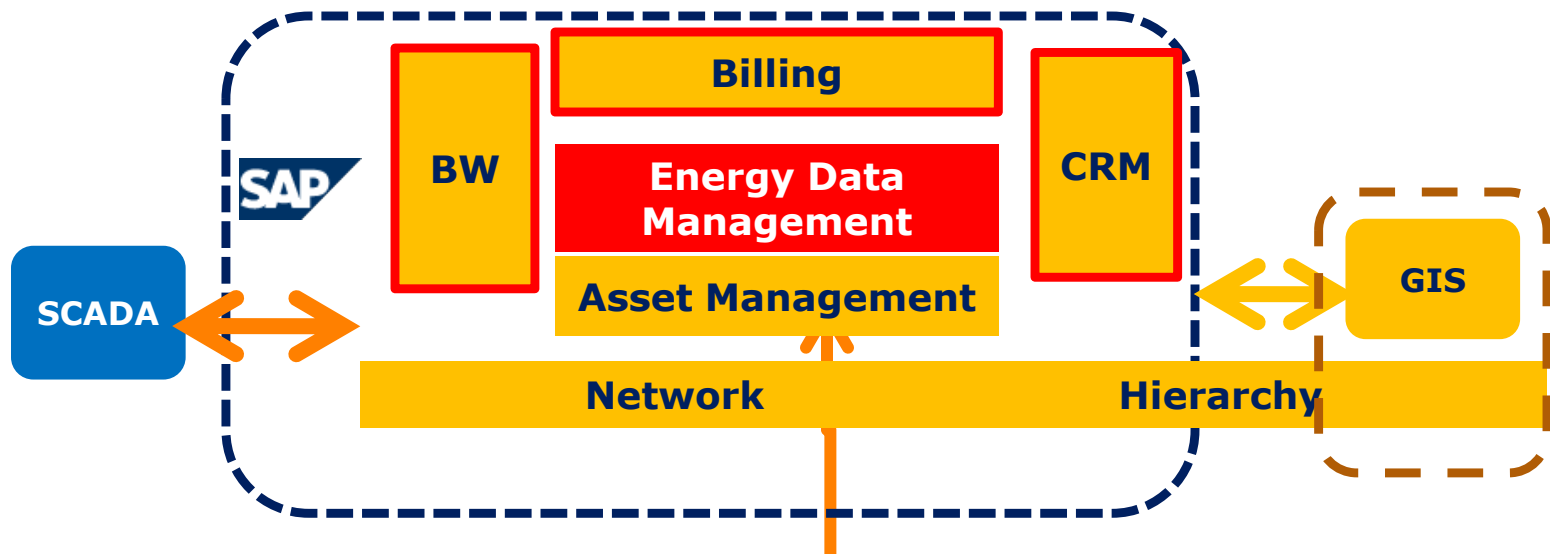
- SAP EDM is the cornerstone for a utility in reaching operational excellence
- PM Hierarchy + AMR +EDM is a very powerful tool set (losses, balancing etc)
- EDM integrates with Billing and CRM for customer and revenue improvements
- EDM links with Asset Management so is kept up to date
- EDM is linked to MDM for AMR reads
- MDM is used to aggregate and validate reads before integrating with EDM
- MDM works with multiple meter types
- **EDM brings it all together;** Customer, device and network data integrated and managed in SAP for process excellence



EDM = Energy Data Management PM=Plant Maintenance  
MDM= Meter Data Management



### 3. SMART GRID (Loss Analysis, TOU Billing and Energy Marketing)



Accurate network hierarchy in SAP EAM enables SAP to provide load balancing, technical and commercial loss analysis within EDM module.

Outages are detected early in EDM and work crews dispatched proactively.

Reduce losses and outage durations

**Meter Data Management (MDM)**

**AMR**

**AMR**

Time of Use billing enabled by linking the AMR reads captured in SAP EDM.

CRM is used to segment customer based on consumption patterns from meter read data in EDM.

CRM targets energy conservation and Off peak tariff promotions.



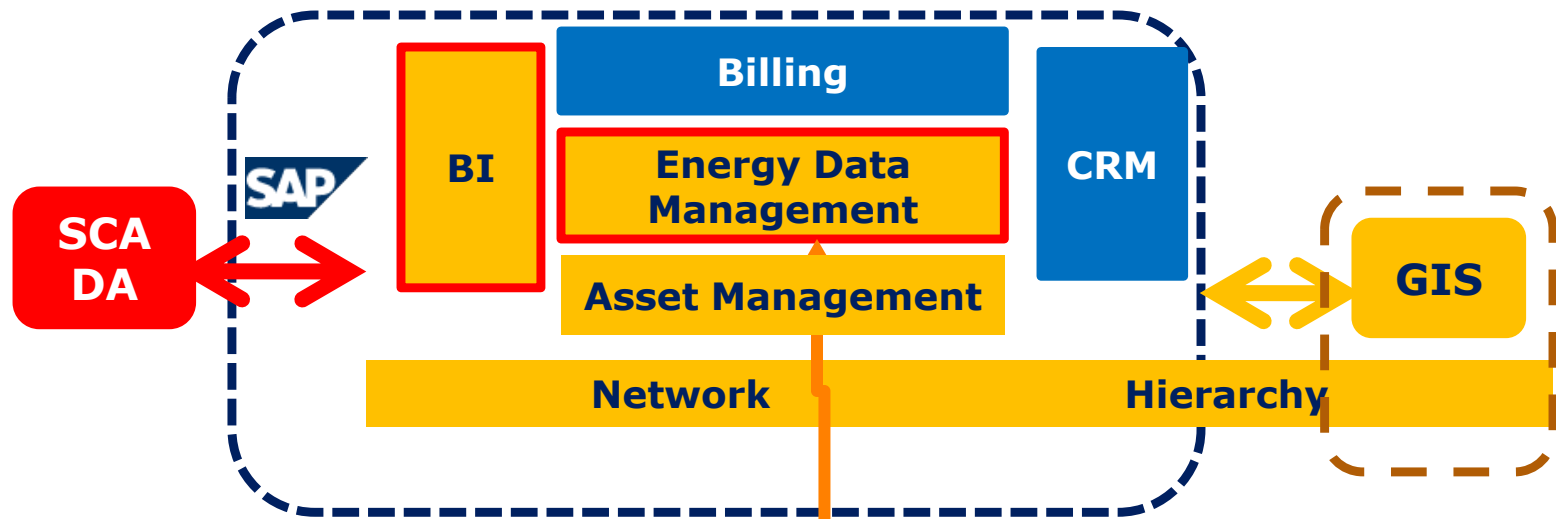
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# 4. Distribution Management System (DMS)



Network planning performed based on consumption history and network performance data recorded in SCADA and SAP EDM.

BI tool uses the data to perform network capacity planning and pin point failure points in the network.

Network construction plan is based on planning analysis.

Construction plan is created and executed in SAP Project Systems module



Existing Apps used in scope

New Work for Project

Out of Scope for Project



# Summary

1. ONE integrated solution that shares ACCURATE customer, premise, network data across operational processes
2. Accurate SAP PM hierarchy maintained with user friendly work management solutions
  1. GIS
  2. GuiXT or CLICK
3. Maximize SAP EDM
4. Transform key processes by leveraging SAP
  1. Mobile Asset Management
  2. Outage Management
  3. Loss Analysis
  4. Network performance and planning



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