PulseANZ2010

Meet the people who can help advance your infrastructure

28-29 July Sydney, Australia

Maximo for the Utilities Industry

Pete Karns, Industry Solutions Leader
Jerry Miller, Lead Architect, Maximo for Utilities

PulseANZ2010

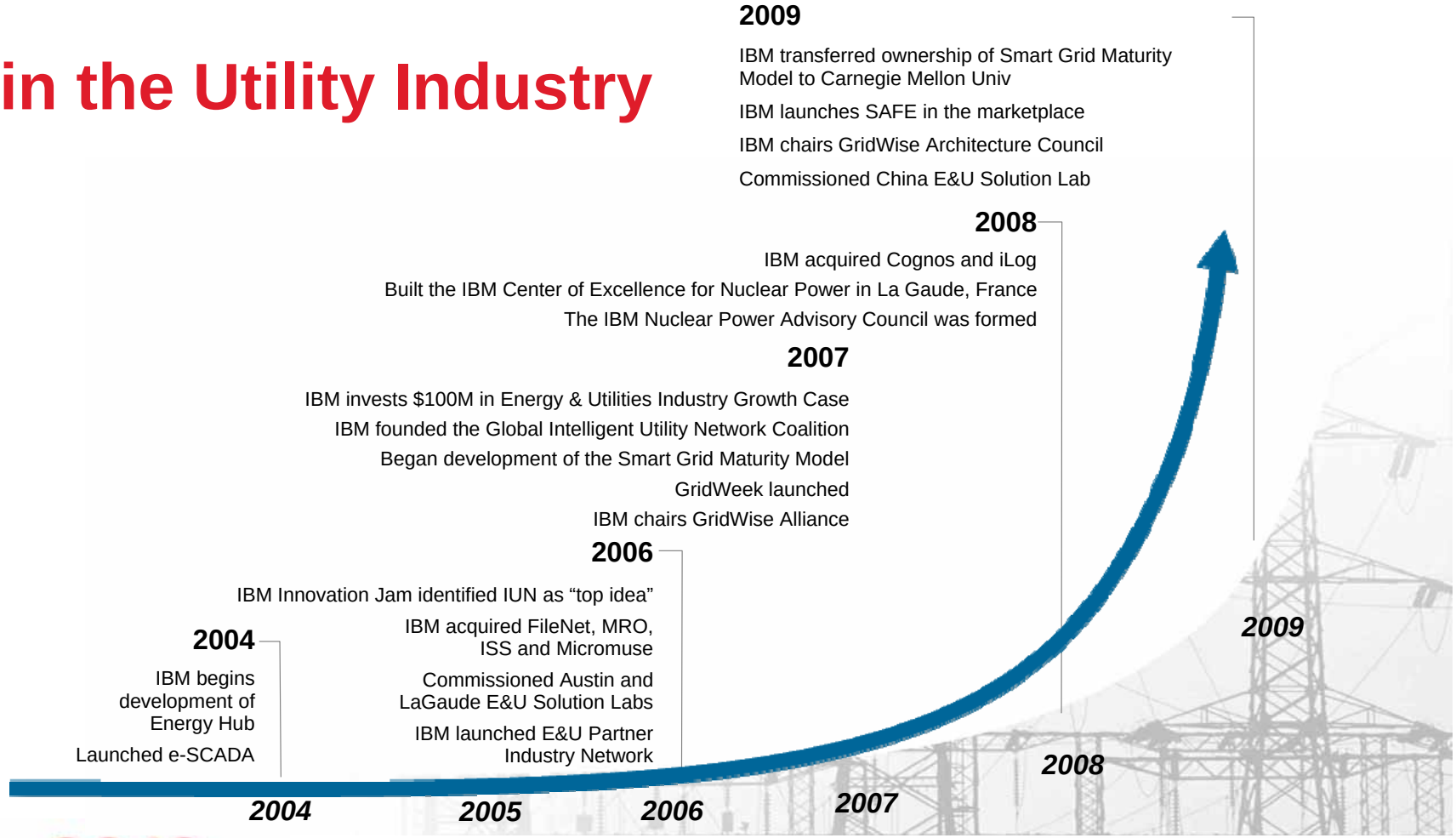
Trademarks and disclaimers

Maximo Utility Working Group – 3:30, Level 3

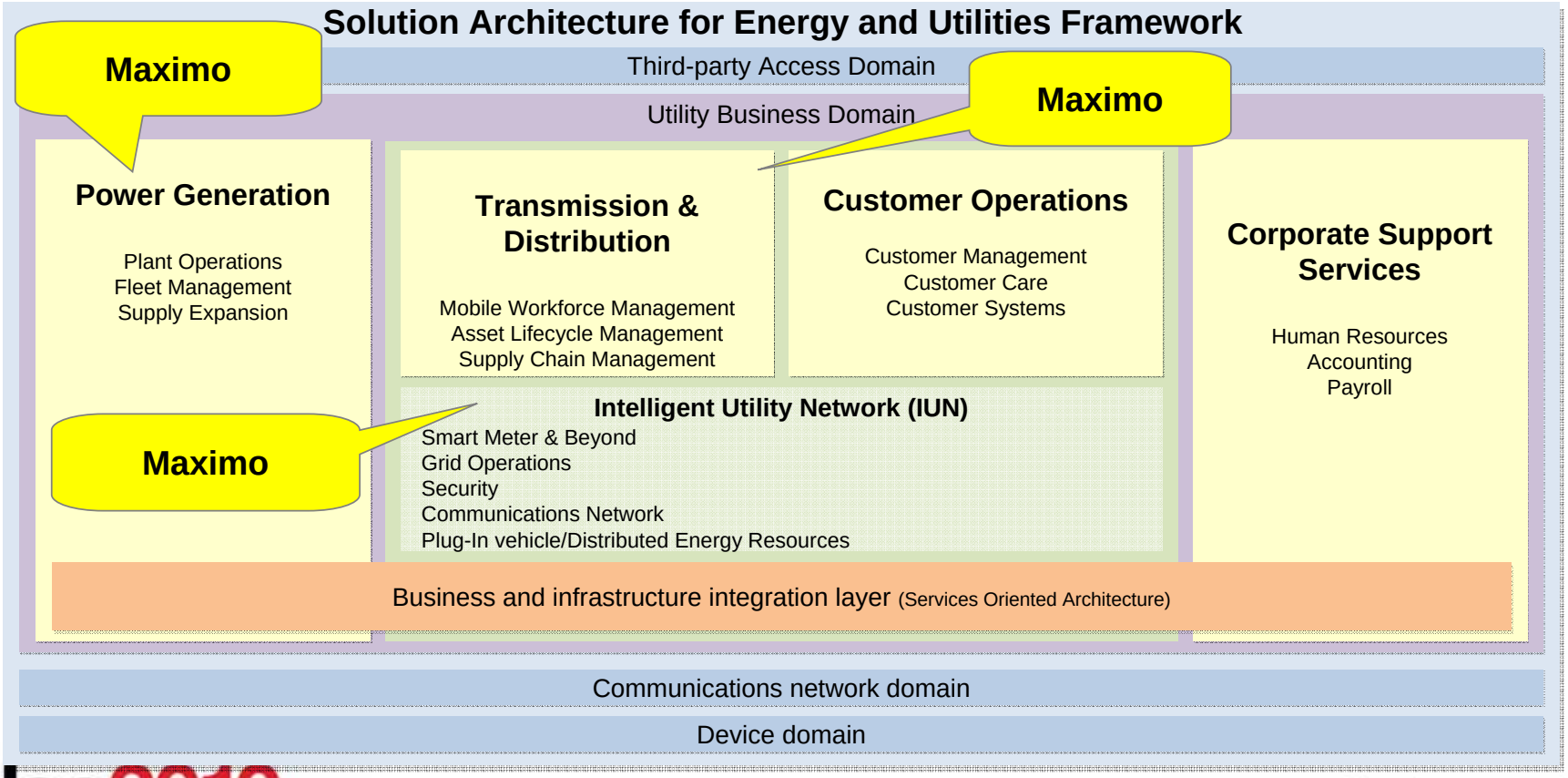
- **Join us and be a part of the inaugural MUWG meeting for Australia and New Zealand**

- **Agenda**
  - Meet the Utility Community – Welcome and Introductions
  - Learn about the value of the MUWG community
  - Listen to a Customer story – Mighty River Power
  - Shape the future of the MUWG

IBM in the Utility Industry



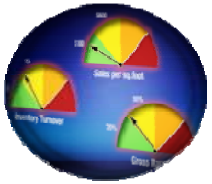
Solution Architecture for Energy & Utilities (SAFE)



What Does This Mean for You?

Asset, Device and Service Monitoring

Visualize infrastructure availability and performance through device, event and usage data, providing real-time control and analysis to speed time to resolution.



Asset Lifecycle Management

Track, document and make decisions about the procurement, deployment, operation, maintenance, and disposal of generation plant, transmission or distribution field assets.

Informed Decision Making

Use data and information aggregated from business and operation systems to analyze events, develop insights, correlate reactions to change, to improve business flexibility and performance.

Improved Customer Experience

Deliver convenient, personalized customer experience, by enabling interactive communication and providing consumers more control of their of their energy sources and usage.

Business Process Automation

Model, manage, and optimize business processes resulting in faster time to market, increased customer satisfaction, and higher productivity.

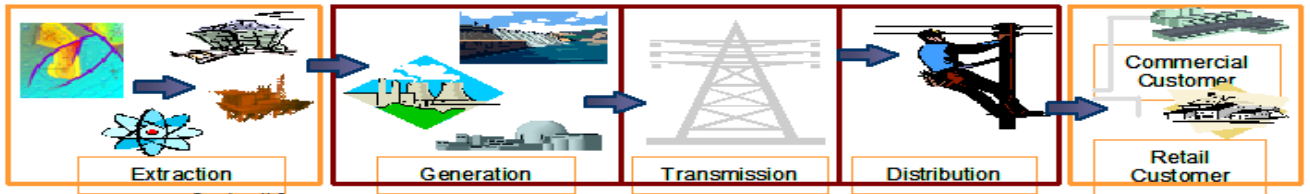
Regulatory, Risk & Compliance Management

Manage large quantities of utility documents and processes to comply with government mandated regulations

Security Solutions

Comprehensively manage and prevent security risk across all business domains

Maximo in the Utilities Industry



- Field development
- Drilling operations
- Crude oil & gas Production
- Mining Coal
- Fossil Generation
- Hydro Generation
- Nuclear Power
- Wind Power
- High Voltage transmission
- Substations
- Mobile Inspection
- Work Management
- Operations Management

Notable Success

SOUTHERN COMPANY · Duke Energy · PGE · VECTREN Live Smart · TVA · NOVA SCOTIA POWER An Emera Company · MAVIR

300+ Utilities Clients

Growing market share in all sectors

17 of 30 Fortune 1000 Utility Companies

Investor Owned, Merchant, Municipal or Agency

Key Utility Sectors

Fossil/Hydro Generation – 45% North American Fossil Generation and 55% of North American Hydro Power Generation

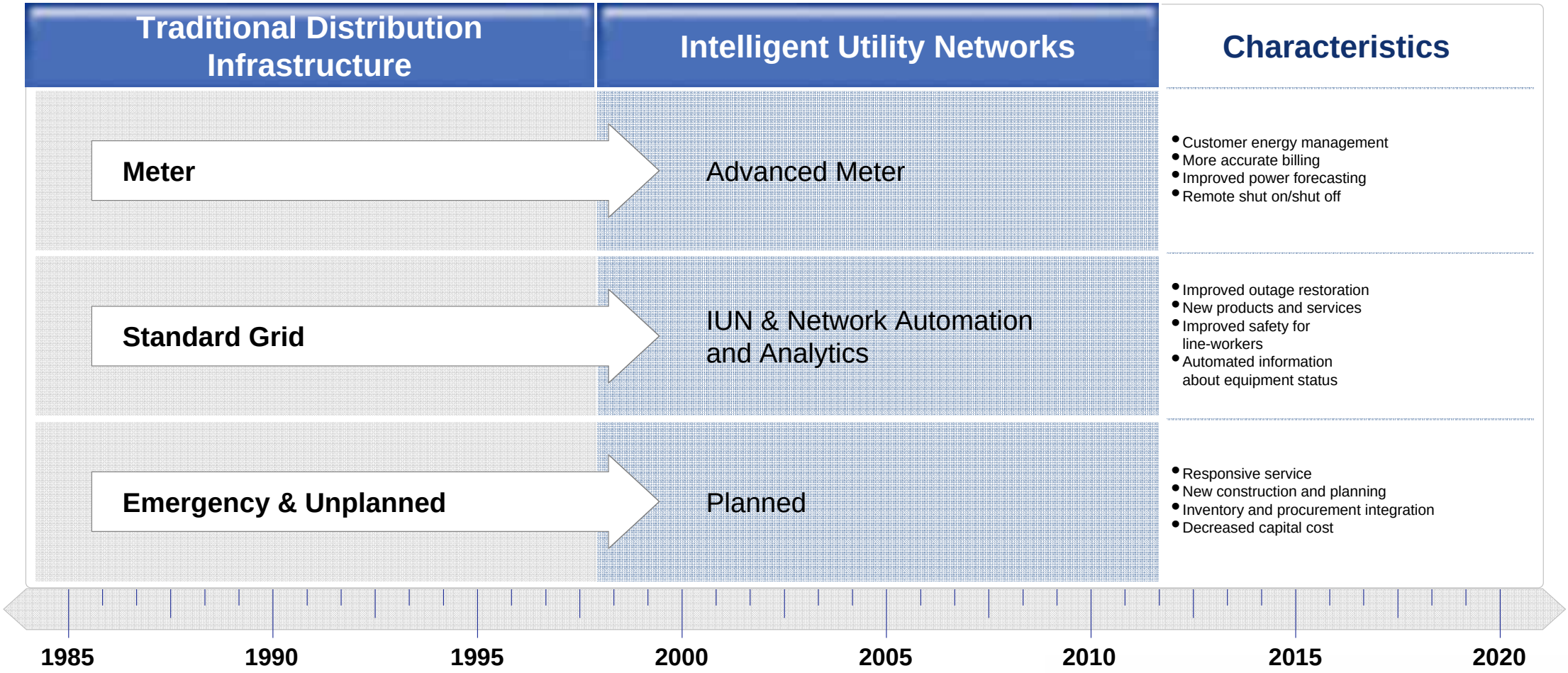
Nuclear Power – 12 Customers, 55 Units WW Presence.

T&D Transmission and Distribution Substation Maintenance, Gas Transmission, Gas Distribution, Water and Waste Water

Top Reasons for Selecting Maximo for Utilities

1. **Consolidation of asset management solutions** – for Power Generation, Electric & Gas T&D, Facilities, Vehicles, & IT assets
2. **Technology** – J2EE Certified, Service Oriented Architecture (SOA) platform – standardization, scalability, usability, security
3. **Capabilities** – Feature rich solution for managing nuclear power & T&D assets
4. **Convergence of OT & IT** – IT systems are leveraging the utilities ability to stay competitive
5. **Leadership Position** – In both the Gartner MQs and ARC EAM WW Outlook
6. **People** – Two dedicated development teams and client development partners for Nuclear and Transmission & Distribution

Trends in Transmission and Distribution Operations



Source: IBM Institute for Business Value (IBV) analysis

Vision

Enhance Maximo to support Transmission and Distribution utility work process in Electric, Gas and Water.

Support the design, construction, and accounting for new utility infrastructure.

Further development is now focused on supporting IUN/ Smart Grid features for a smarter planet, future development will extend capabilities to gas and water segments as well as electric to maximize business operations with advancing technology

The Integration Framework supports the customer ecosystem of software products that support distribution management (OMS, DMS) and utility operations (GIS, CIS)

Only vendor in the leader's quadrant in Gartner's Analysis of Enterprise Asset Management for Transmission and Distribution

History

IBM developed and marketed Maximo CUE for Maximo v4

Maximo for Utilities v5.2 was released in 2004 with an initial focus on Compatible Unit Estimating and Crew Management was added in 2005 for v 6

Maximo for Utilities 6.1 added product GIS integration to ArcGIS server supporting geospatial management capabilities in an asset/work management system

Maximo for Utilities 7.1.1 is currently available adding CPM for Crews and the Service Address application supporting premise geo-coding

IBM Maximo for Utilities Supports DB2, Oracle and SQL Server.

Utility clients / development partners

Duke Energy · BGE · Lakeland Electric · Portland General Electric · DTE Energy · SRP Delivering More Than Power · Colorado Springs Utilities

MUWG – Maximo Utilities Working Group

Meet the people who can help advance your infrastructure

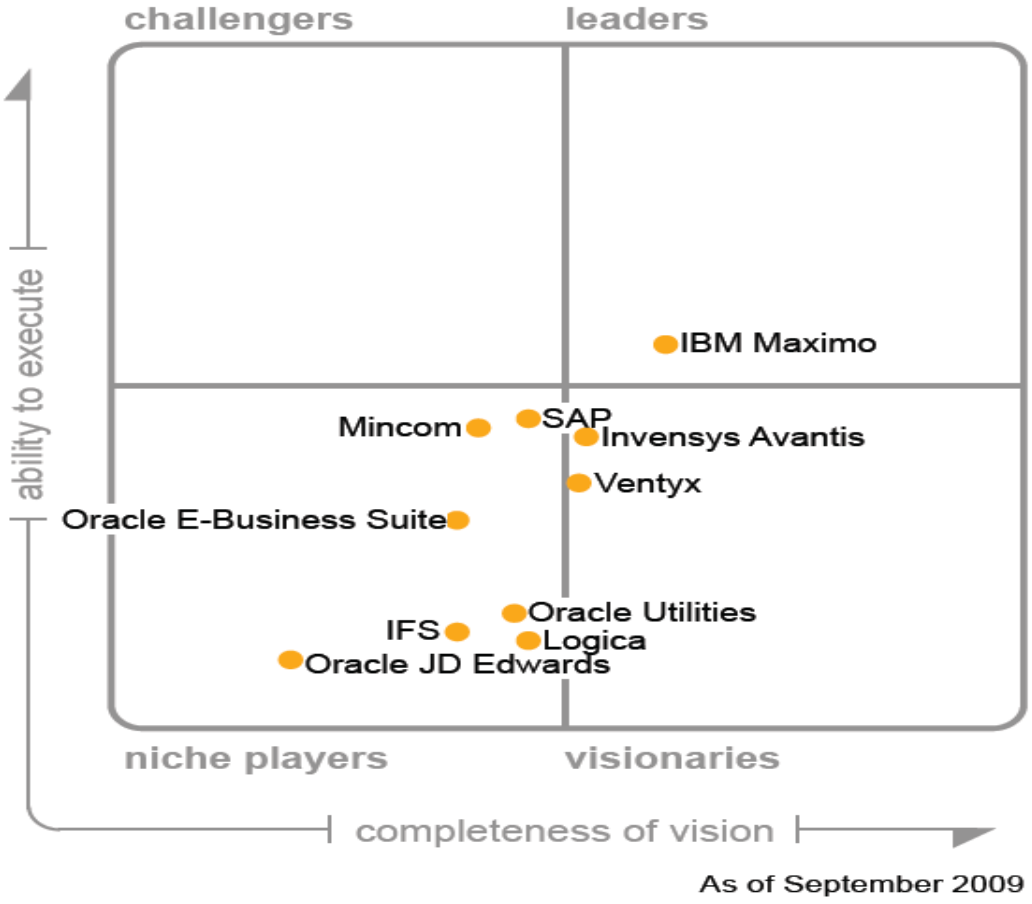
Maximo for Utilities at a Glance (40+ Utilities Customers 100 + Spatial)

- Major Components:
  - CU (Compatible Unit) Library and Estimating – Standards based estimating
  - Crews – provide full support for crews (a collection of resources working together)
  - Maximo Scheduler – CPM for Crews
  - TD Adapter downloadable from OPAL- extensions to the MEA – Maximo Enterprise Adaptor (Integration Framework)
    - Mobile Work Force Management
    - Graphical Design Tool
    - Fixed Assets
  - Maximo Spatial Asset Management – GIS Integration to ESRI ArcGIS Server
    - Added GIS Map Tab to Work Order, Asset, Location and Service Request Applications to Spatially enable these applications.
    - Service Address Application supports Premise Geo-coding
    - Goal was to make GIS look like a natural part of Maximo

IBM Maximo for Utilities Overview

- **Supports work and asset management for transmission and distribution in water, gas and electric utilities.**
  - Helps increase asset and resources effectiveness by **providing a platform to support all types of asset classes and all types of work in water, gas and electric utilities.**
  - **Create detailed estimates** with Compatible Unit Estimating (CUE) and a multilevel compatible unit library
  - **Manage crew type** and crew makeup with enhanced crew management while tracking **labor skills and certifications**
  - **Integrated with fixed-asset accounting, mobile workforce management and graphical design** tools based on SOA
  - **Includes Maximo Spatial** to support map-based user interface built on ESRI ArcGIS technology.
  - **Integrated work and asset management** functionality on a modern, J2EE standards based platform including supply chain management, contact management, and SLA.

Magic Quadrant - EAM for Transmission & Distribution



Source: Gartner (September 2009)

16 September 2009
© Gartner, Inc.
Kristian Steenstrup
T&D
D: G00170316

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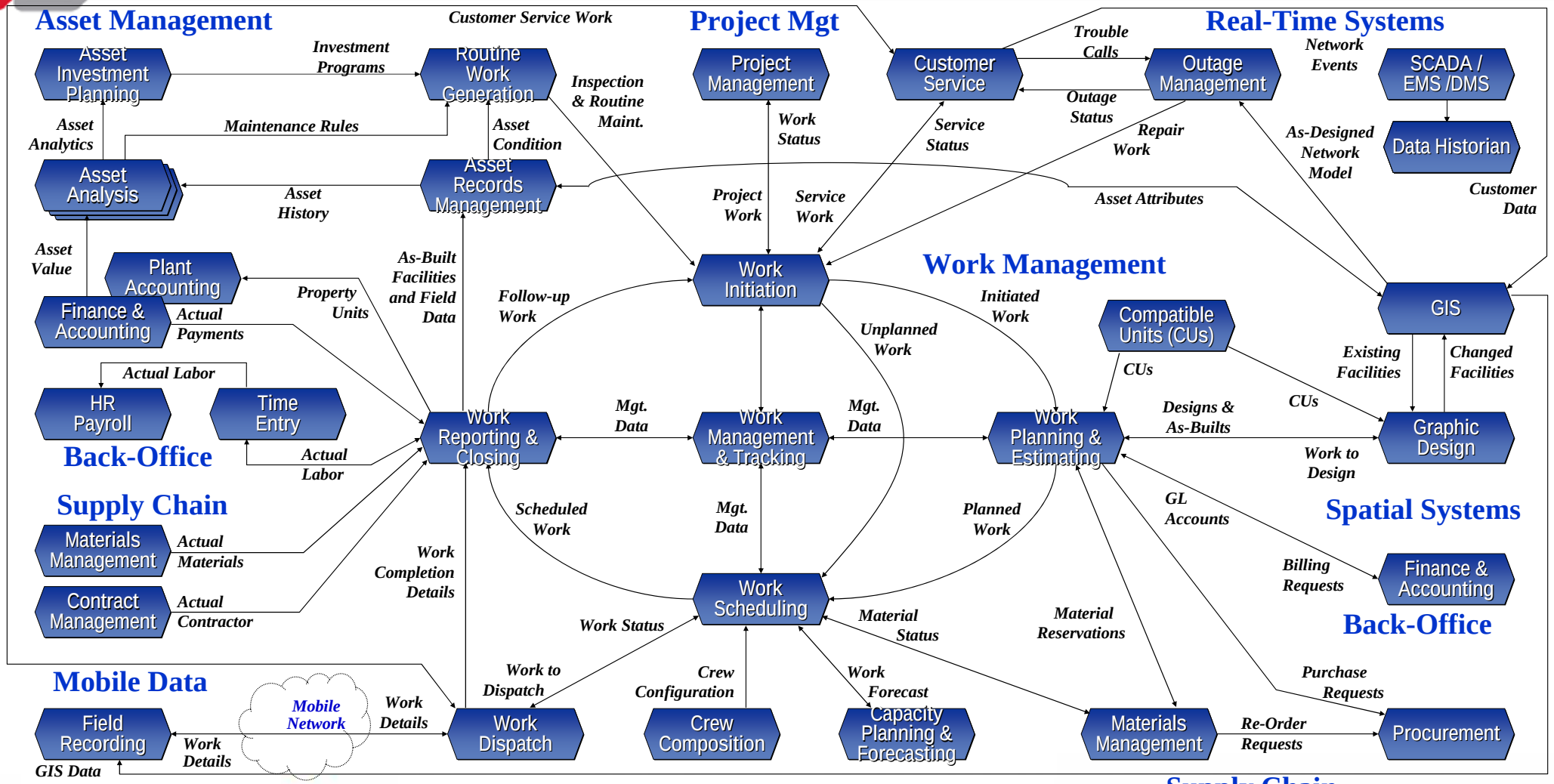
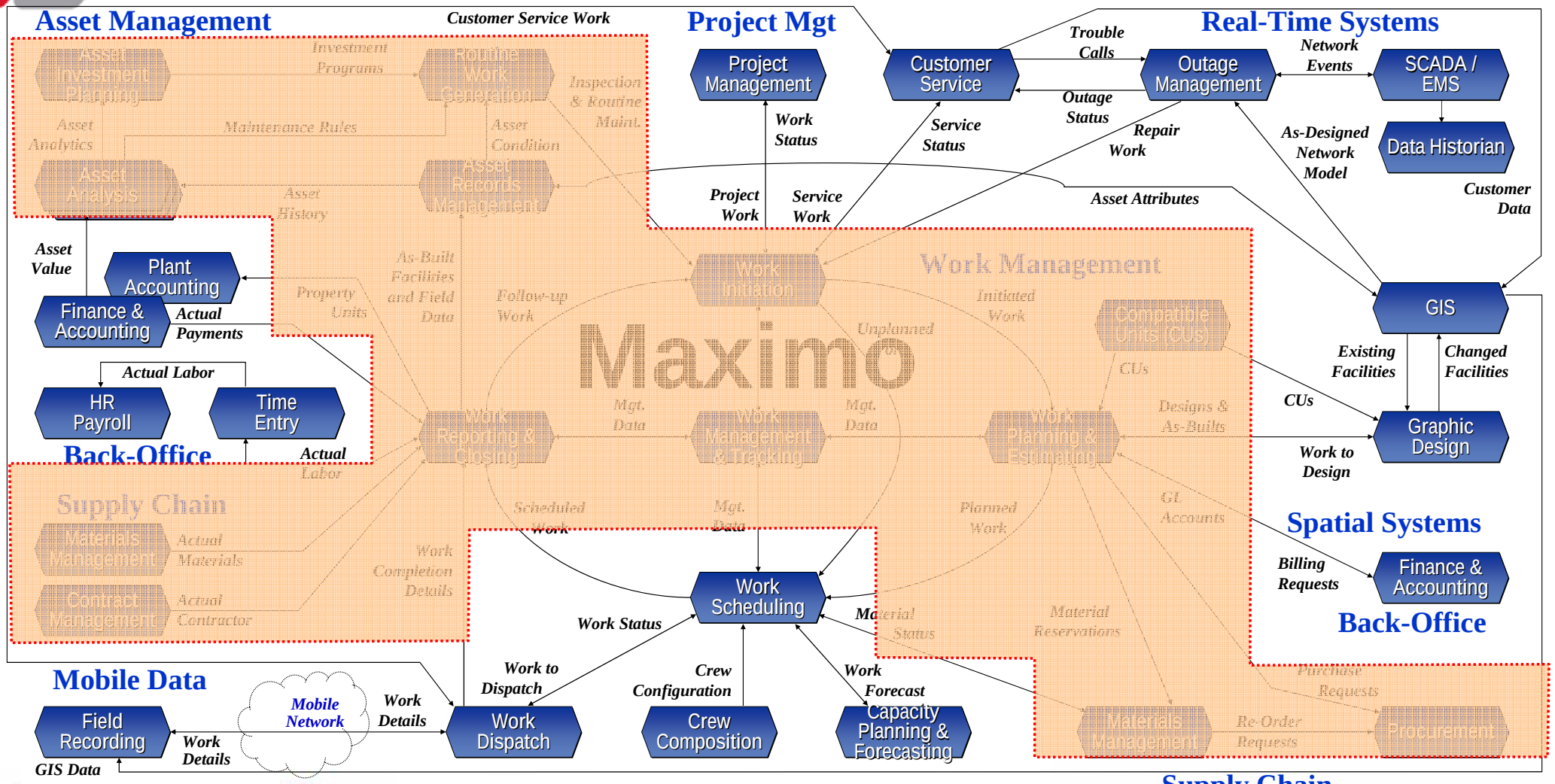
customers


Asset Management
Customer Service Work
Project Mgt
Real-Time Systems
Asset Investment Planning
Investment Programs
Routine Work Generation
Inspection & Routine Maint.
Project Management
Customer Service
Trouble Calls
Outage Management
Network Events
SCADA / EMS /DMS
Asset Analytics
Maintenance Rules
Asset Condition
Work Status
Service Status
Outage Status
Repair Work
As-Designed Network Model
Data Historian
Asset Analysis
Asset History
Asset Records Management
Project Work
Service Work
Asset Attributes
Customer Data
Asset Value
Plant Accounting
As-Built Facilities and Field Data
Work Initiation
Work Management
Property Units
Follow-up Work
Initiated Work
Compatible Units (CUs)
GIS
Finance & Accounting
Actual Payments
Unplanned Work
Existing Facilities
Changed Facilities
Actual Labor
CUs
HR Payroll
Time Entry
Mgt. Data
Mgt. Data
Designs & As-Builts
CUs
Work Reporting & Closing
Work Management & Tracking
Work Planning & Estimating
Graphic Design
Back-Office
Actual Labor
Work to Design
Supply Chain
Scheduled Work
Mgt. Data
Planned Work
GL Accounts
Spatial Systems
Materials Management
Actual Materials
Work Completion Details
Billing Requests
Finance & Accounting
Contract Management
Actual Contractor
Work Scheduling
Work Status
Material Status
Material Reservations
Back-Office
Mobile Data
Work to Dispatch
Crew Configuration
Work Forecast
Purchase Requests
Field Recording
Mobile Network
Work Details
Work Dispatch
Crew Composition
Capacity Planning & Forecasting
Materials Management
Re-Order Requests
Procurement
Work Details
GIS Data
Resource Management
Supply Chain

rest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Work Scheduling
Work Status
Material Status
Material Reservations
Mobile Data
Work to Dispatch
Crew Configuration
Work Forecast
Mobile Network
Work Details
Field Recording
Work Details
Work Dispatch
Crew Composition
Capacity Planning & Forecasting
Purchase Requests
Materials Management
Re-Order Requests
Procurement
GIS Data
Resource Management
Supply Chain

- **Maximo for Utilities 7.1.1 is currently available adding CPM for Crews and the Service Address application supporting premise geo-coding and Spatial 7.1.1 Supports ESRI 9.3.1 and is built using the Java Script REST API 1.5**

Release 7.1.1

- Enhance CUE Perform Acceptance
- UI Improvements
- Crew Gantt View
- Service Address Supports Geo-Coding *
- Auto Create, Auto Locate Work Orders & SRs *
- Polygon Selection Sets with defined Actions *
- Single Click Linking *
- Highlight linked Assets and Locations *
- GIS Synchronization *
- GIS Adm. Defines User Map Services by site *
- Support MultiGeo Databases*
- Supports ArcGIS Server 9.3.1

* Delivered through Spatial

Spatial 7.1.1.1 now available supporting ESRI 9.3.1 SP1

Product Discussion Disclaimer – General Product Direction

- *The information on the new product is intended to outline our general product direction and it should not be relied on in making a purchasing decision.*
- *The information on the new product is for informational purposes only and may not be incorporated into any contract.*
- *The information on the new product is not a commitment, promise, or legal obligation to deliver any material, code or functionality.*
- *The development, release, and timing of any features or functionality described for our products remains at our sole discretion*

Maximo for Utilities -- Roadmap

Released 6.3	Released 7.1	Release 7.1.1	Release 7.1.2
September 2007	December 2008	eGA Dec 2009	eGA Q4 2010

• Services for CUE
• Multi-site Support
<u>GIS Spatial Release</u>
• Map Tab for: Work Order, SRs, Assets and Locations
• Link GIS Feature to Maximo Entity
• Expose GIS Controls via MBOs
• Supports Point, Line, Polygons
• Non-Version & Version Editing
• Layer Filtering
• Supports ESRI ArcGIS Server 9.2
	• Port to Maximo 7
	• Specific Spatial Install
	• Map Tips
	• Graphic interaction On Map between Feature & Result Set
	• Spatial SigOption Security
	• Variable OH Cost For CU's
	• Associate CU's to Task Type
	• Supports ESRI ArcGIS Server 9.3
		• Enhance CUE Perform Acceptance
		• UI Improvements
		• Scheduler for Crews
		  • Gantt View
		• Service Address Supports Geo-Coding
		• Auto Create, Auto Locate Work Orders & SRs
		• Single Click Linking
		• Highlight linked Assets and Locations
		• GIS Synchronization
		• ESRI ArcGIS Server 9.3.1
			• Work Order Pre-requisites
			• Meter Asset Lifecycle Mgmt
			  • Bulk receipt
			  • Import meter data
			  • Meter Sampling
			  • Bulk Deploy
			• Spatial Enhancements
			  • Own roadmap
			• Future:
			Capital Work Planning and Forecasting,
			Dispatch and Routing
			Graphical Crew,
			WO Crediting & Unit Reporting

Maximo 6.2.3	Maximo 7.1.1.4	Maximo 7.1.1.7	Maximo 7.1.2

All dates are estimates and specific content is subject to change.

Maximo for Utilities 7.1.1 Released December 18, 2009

Product Features for Utilities 7.1.1

- **CU Estimating**
  - Performance Improvements
  - Improve ease of use
  - Improve integration to graphical design tools

- **Work Order, Service Requests, Locations**
  - Service Address Tab

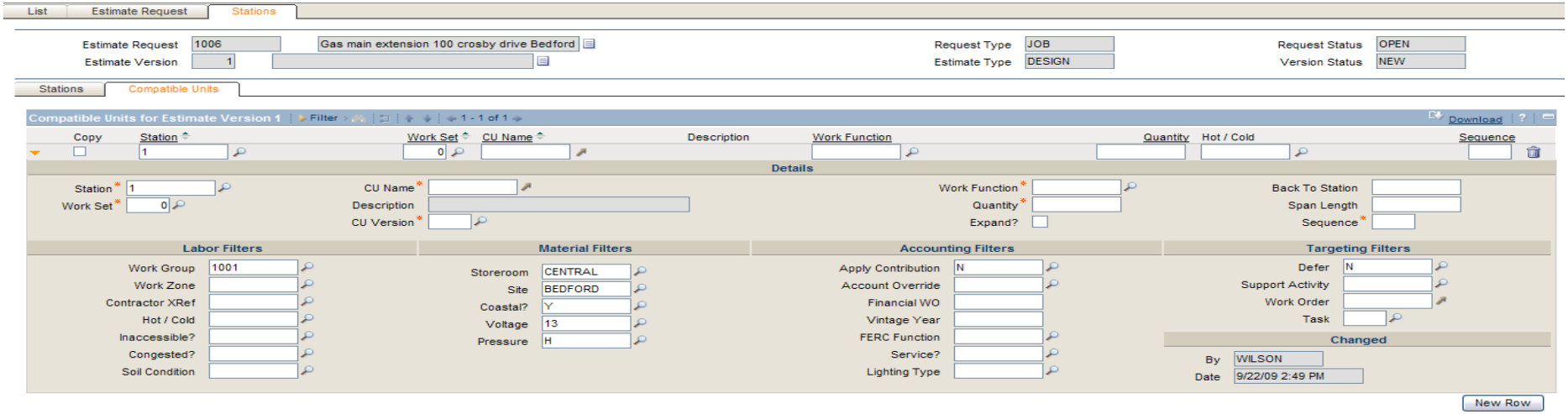
- **Scheduler for Crews**
  - CPM Calculation
  - Visualize resource requirements
  - Drag and drop updating of start and end dates

Enhancement – Improve Performance

- **What is it?**
  - The Actions for Perform Estimate and Perform Acceptance within CU Estimating were re-designed to improve the speed of these actions. The user will continue to select these choices from the Action Menu.

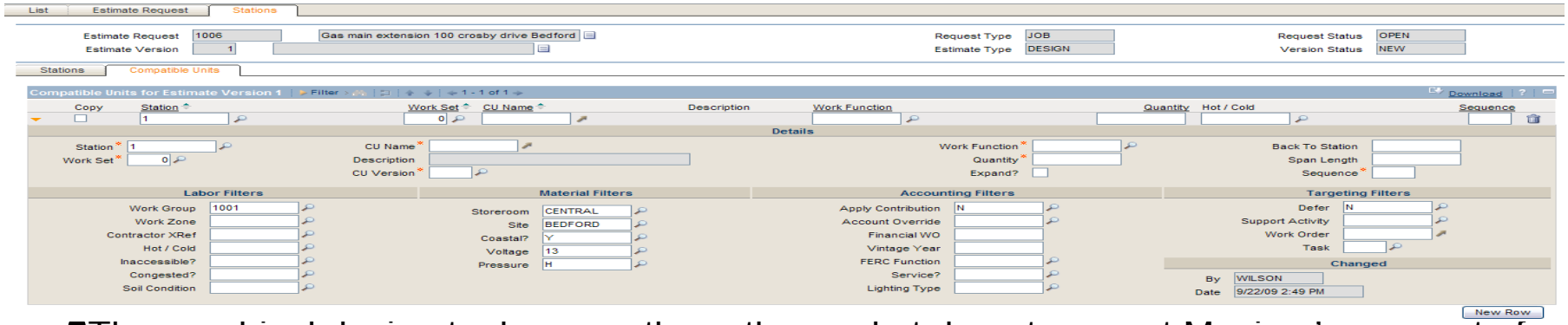
- **Business Value**
  - Customer will be able to work effectively with larger estimates.

Enhancement – Improve Ease of Use



- **Within CU Estimating the Estimate Request tab and the Stations tab were redesigned**.
  - Fields grouped more logically
  - More use of non-persistent fields
  - Reduce the need to manually create work set records
  - Allow user to see all CU's for an estimate version
  - Field level help and error messages were updated for the most common support questions.

Enhancement – Improve Integration for Graphical Design Tools



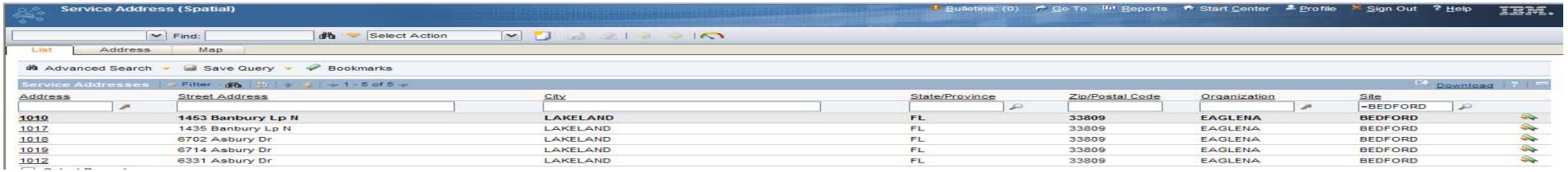
- The graphical design tools currently on the market do not support Maximo's concept of a Work Set.
- This release will reduce the need for the user to manually create work sets and Maximo will create new work sets automatically.
- By adding the logic to create work sets automatically, the integration with Graphical Design tools will be easier.

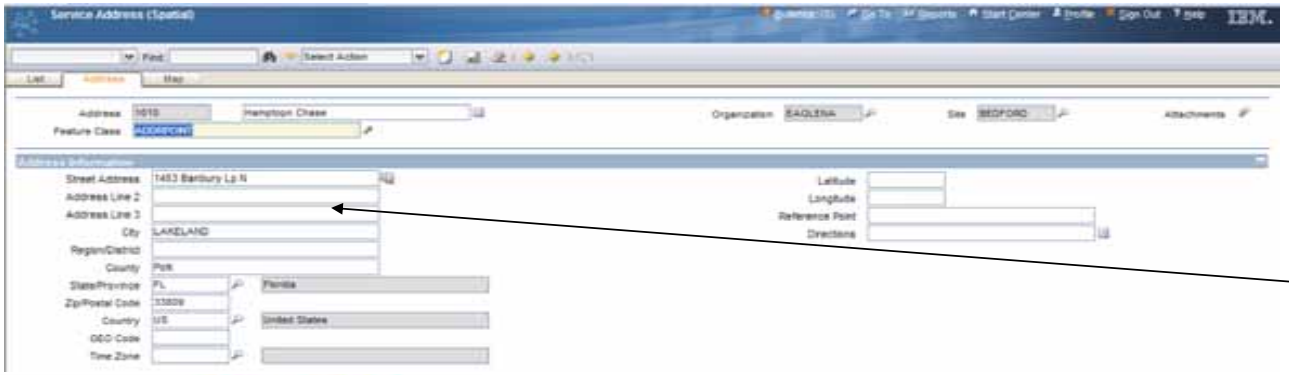
Service Address

NEW - Service Address App

- **Problem** – need a common way to identify a physical locations
- **Solution** – added Service Address to all spatial enabled applications
- Service Address fields added to Assets, Locations, Work Orders and Service Requests
- Enables search by address in Maximo Advanced Search

- Address fields can be exposed on application form using App Designer

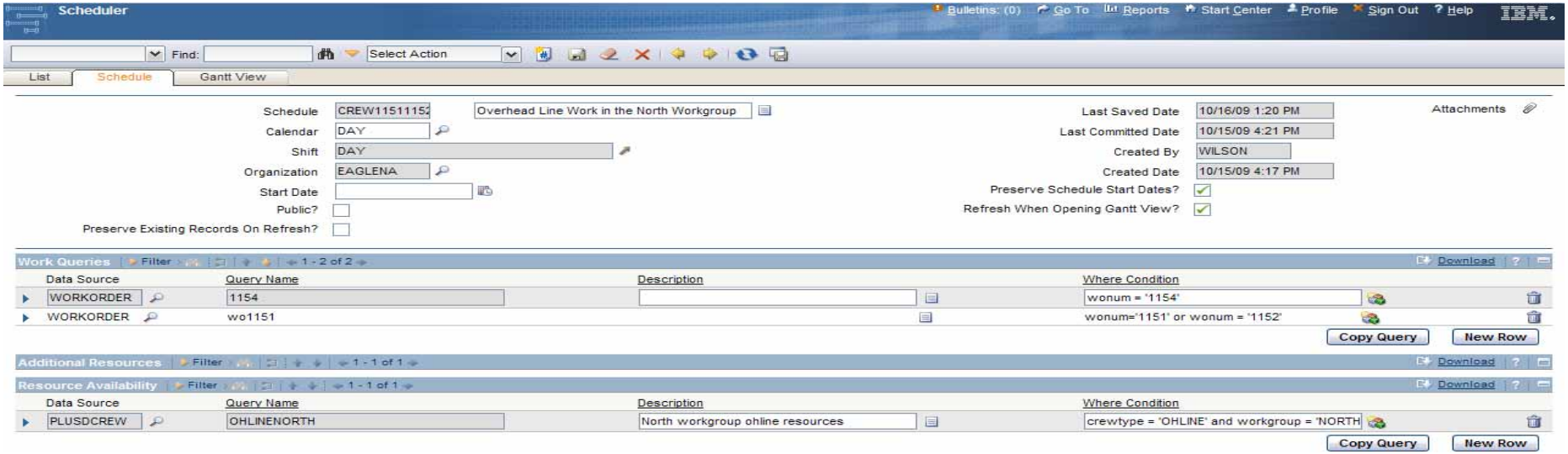




Enhancement – WO Track changes for Scheduler

- **What is it?**
  - There are new scheduling fields on the WO Tracking application to display the critical path dates for the work order and the tasks. These fields are updated by the new Scheduler application.
  - The work order can also be excluded from the Gantt view in the Scheduler application.
  - Duration is calculated from the effort hours on the Plans tab.

Enhancement – Scheduler for Crews

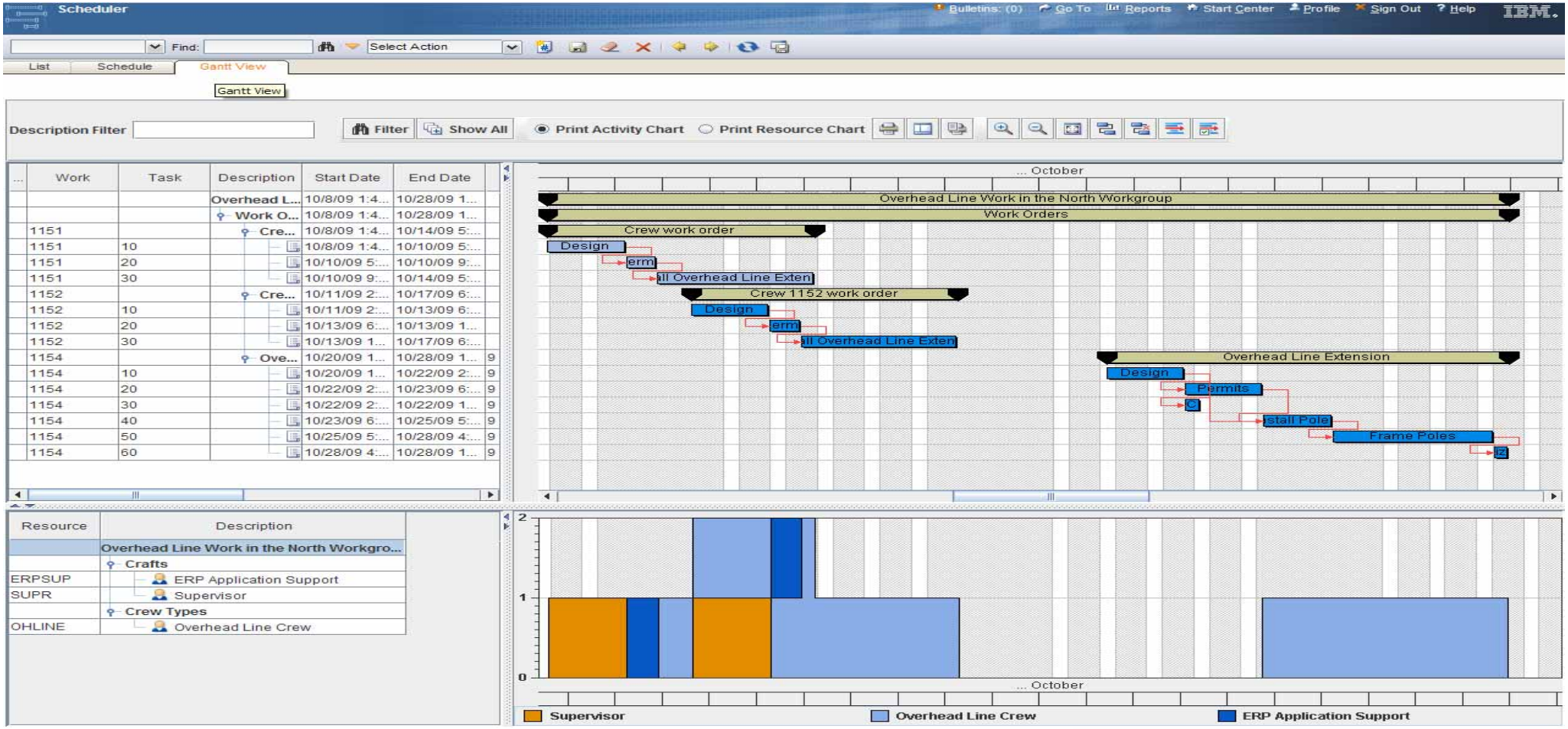


- **What is it?**

  - A new application that allows the user to define a project of work orders and the resource pool that will perform the work.

  - The application displays the project as a Gantt view, calculates CPM dates, allows the user to update due dates with the goal of levelizing resources.

Enhancement – Scheduler for Crews



Enhancement – Scheduler for Crews

- **Business Value**
  - Will assist the user in planning the work to be done in the next week, month or quarter. This process will identify when overtime or contractors must be used to meet the work load demands. By matching work load with all available resources in a graphical format a better schedule can be created.
- **Work List** – Displays all work orders and tasks that were defined for the project. Columns can be configured and dates can be manually updated.
- **Gantt View** – Displays task dependencies, allows task dependencies to be edited, calculates critical path, supports drag and drop due dates and commits new due dates to work orders.

Enhancement – Scheduler for Crews

- **Resource View** –

  Displays a list of resources that are required on the selected work orders. Can also view additional resource pools that are not included as required for list of work orders.

- **Resource Demand** –

  Displays the number of resources required and allows the user to compare resources required with resources available for the time period.

Product Features for Base Maximo 7.1.1.6

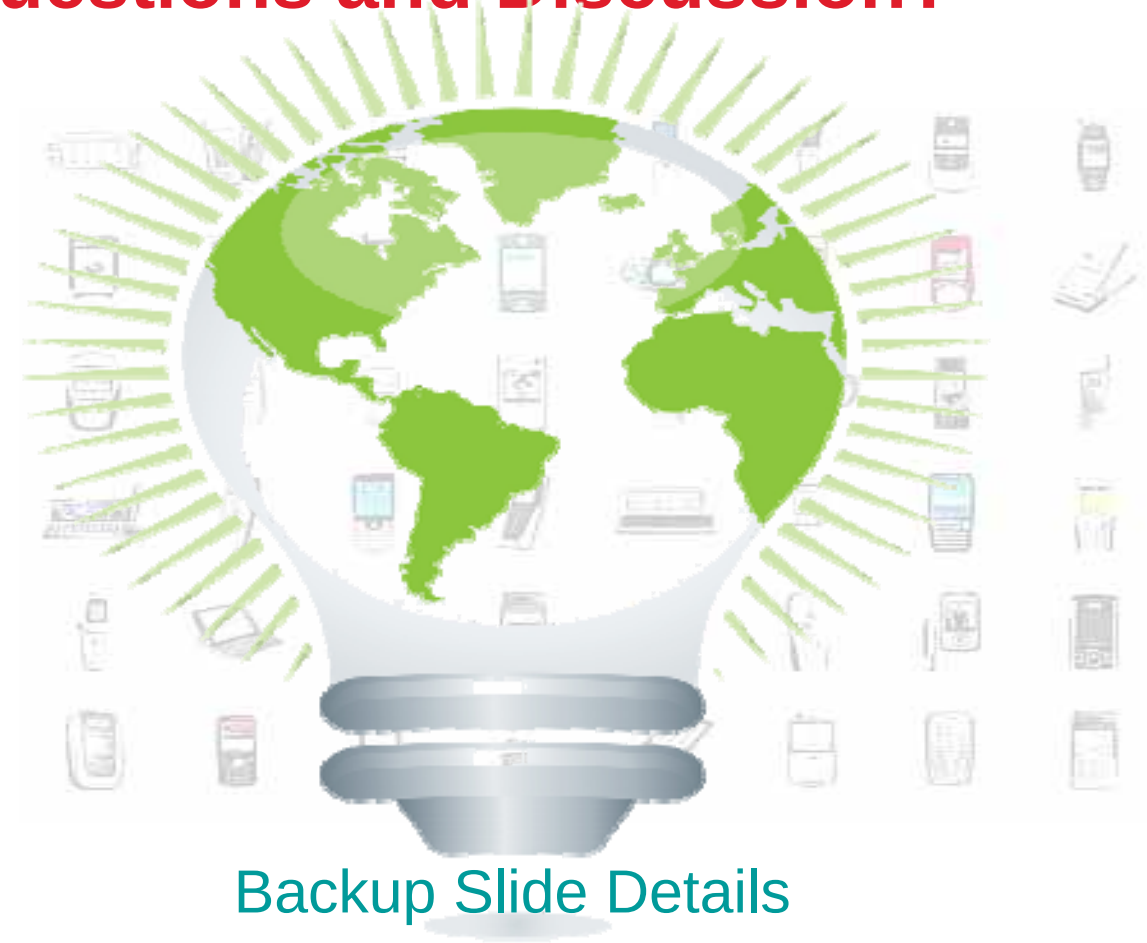
- **Base Maximo added new features in the 7.1 release which will now be supported by the Maximo for Utilities solution.**
- **Attribute searching for Classifications**
  - Compatible units can be searched by any attribute or attribute value within the CU Library.
- **Use Cases**
  - A Gas Designer is looking for valve that fits a 4” cast iron main and uses the attribute search dialog to display all CU’s that are for use on 4” cast iron pipe.
- **Business Value**
  - Will help Users quickly find the right CU within a large CU Library.

Enhancement – Base Maximo 7.1.1.6

New features not directly related to the Maximo for Utilities solution

- Web Services Interactions
- ITM for Maximo (Monitoring)
- Cognos Report Integration

Questions and Discussion?

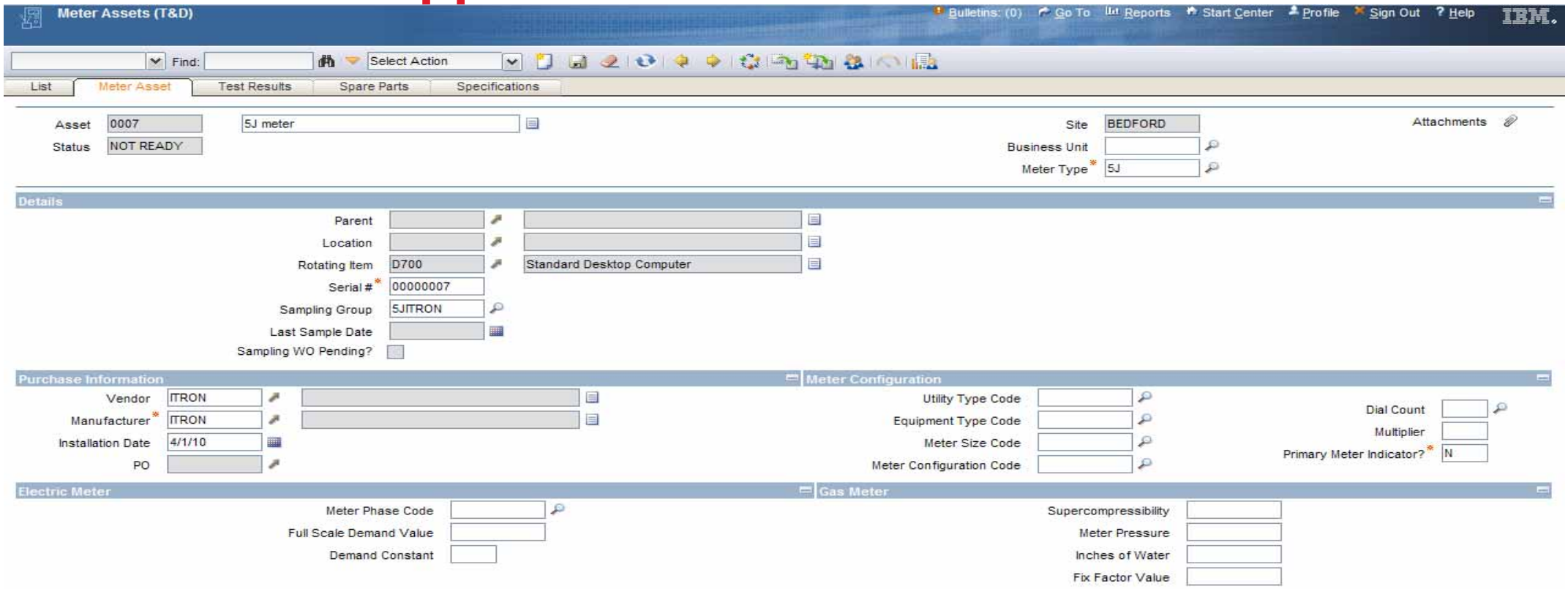


Backup Slide Details

Demonstration of Maximo for Utilities 7.1.2 – Beta –

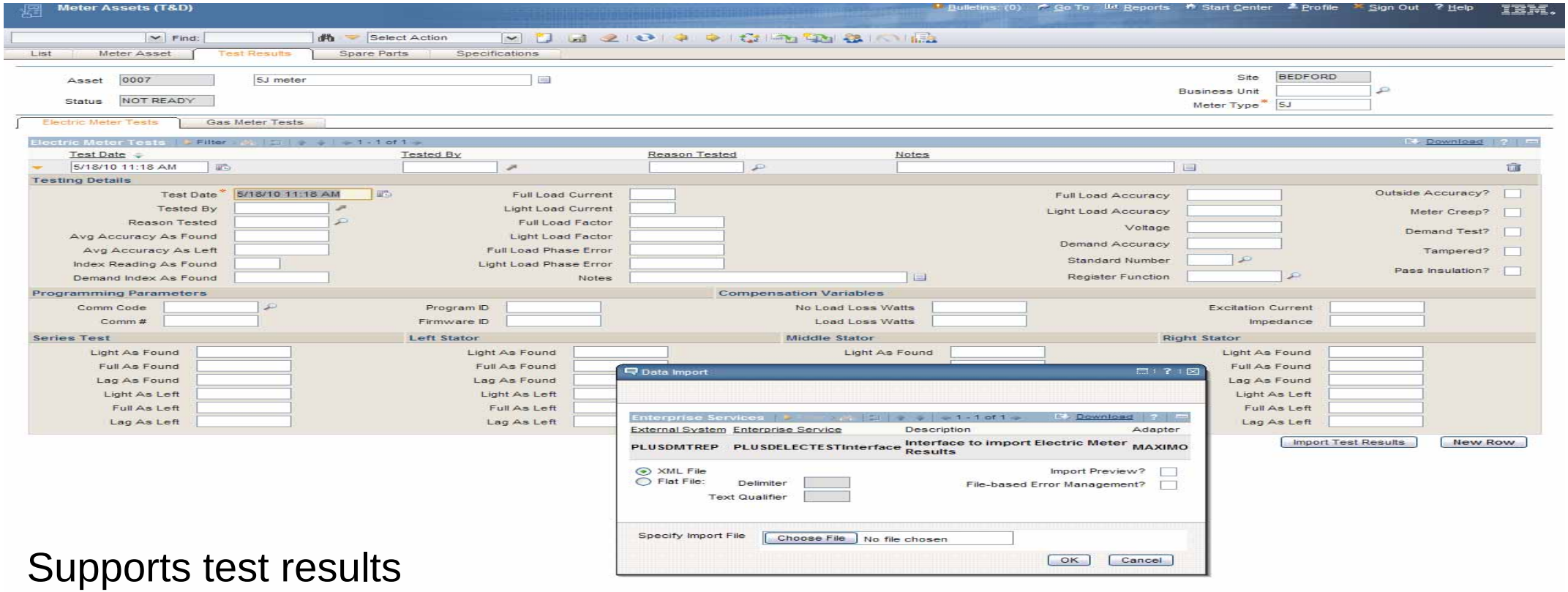
Revenue Meter Lifecycle Asset Management

Meter Assets Application



Supports meters as an asset record

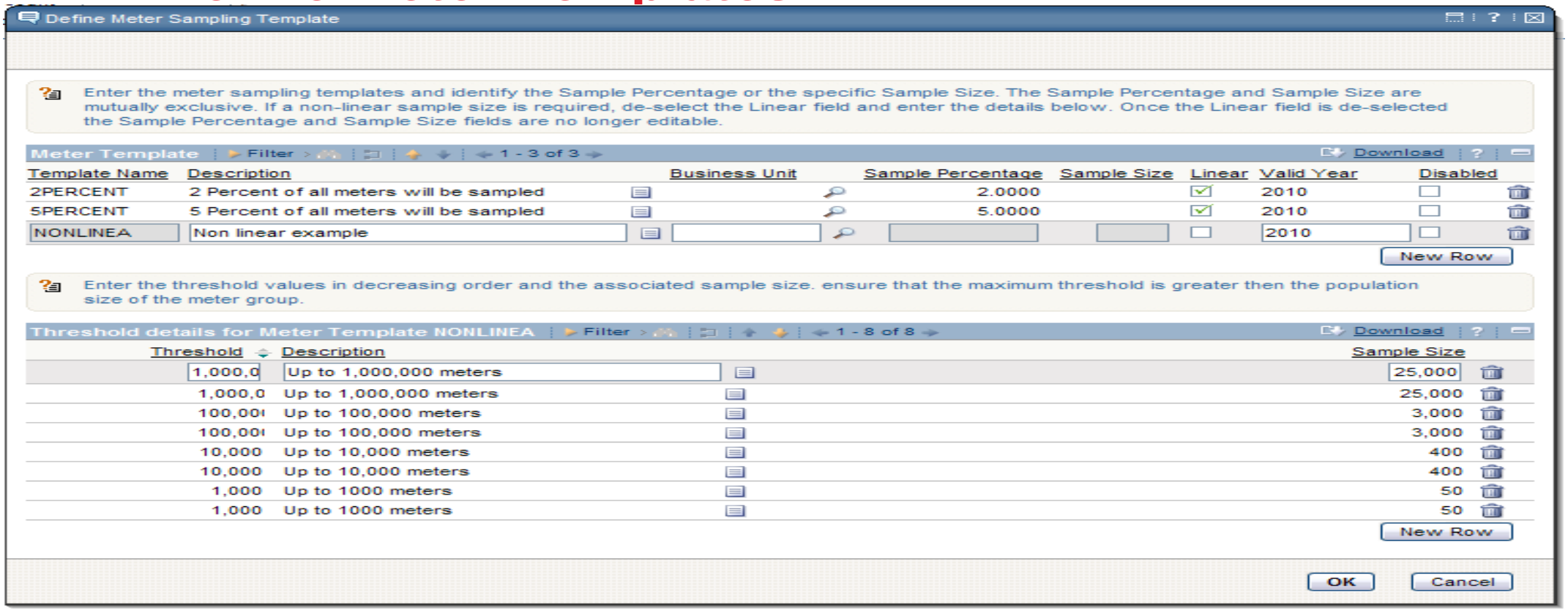
Test Results Tab



Supports test results

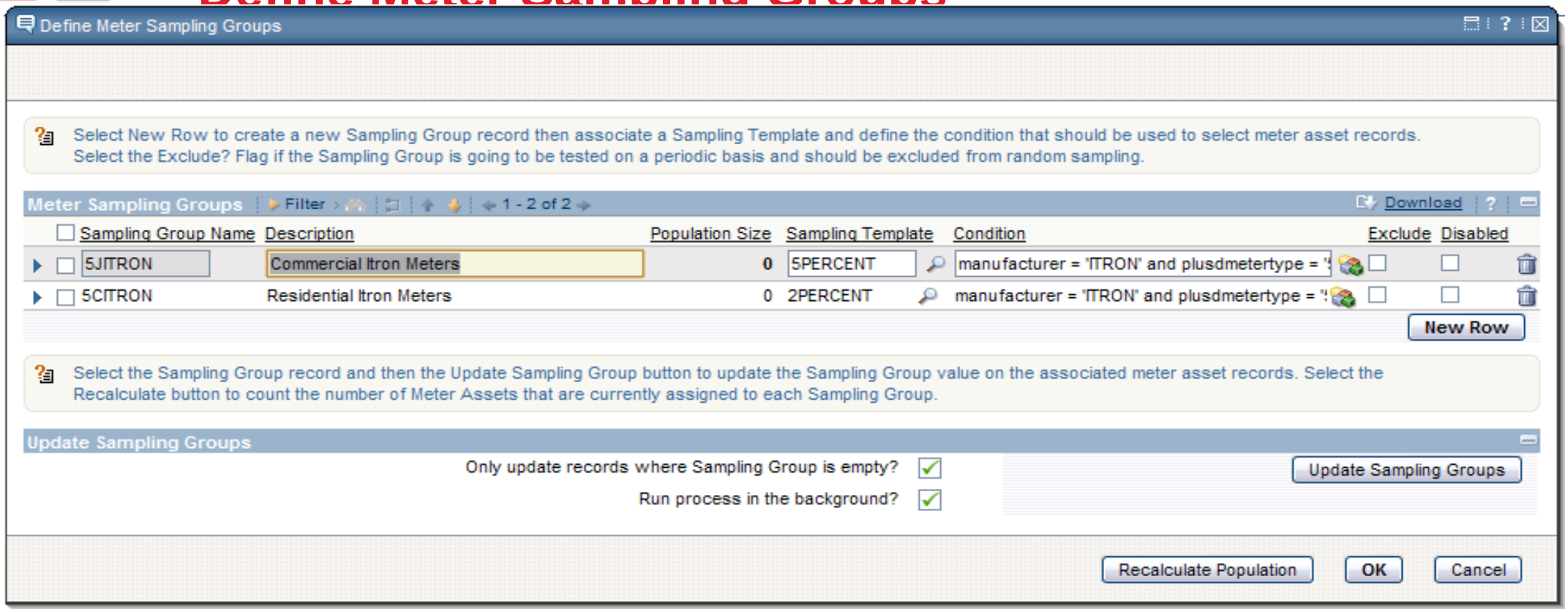
Able to import an XML or text file from a third party testing application

Define Meter Templates



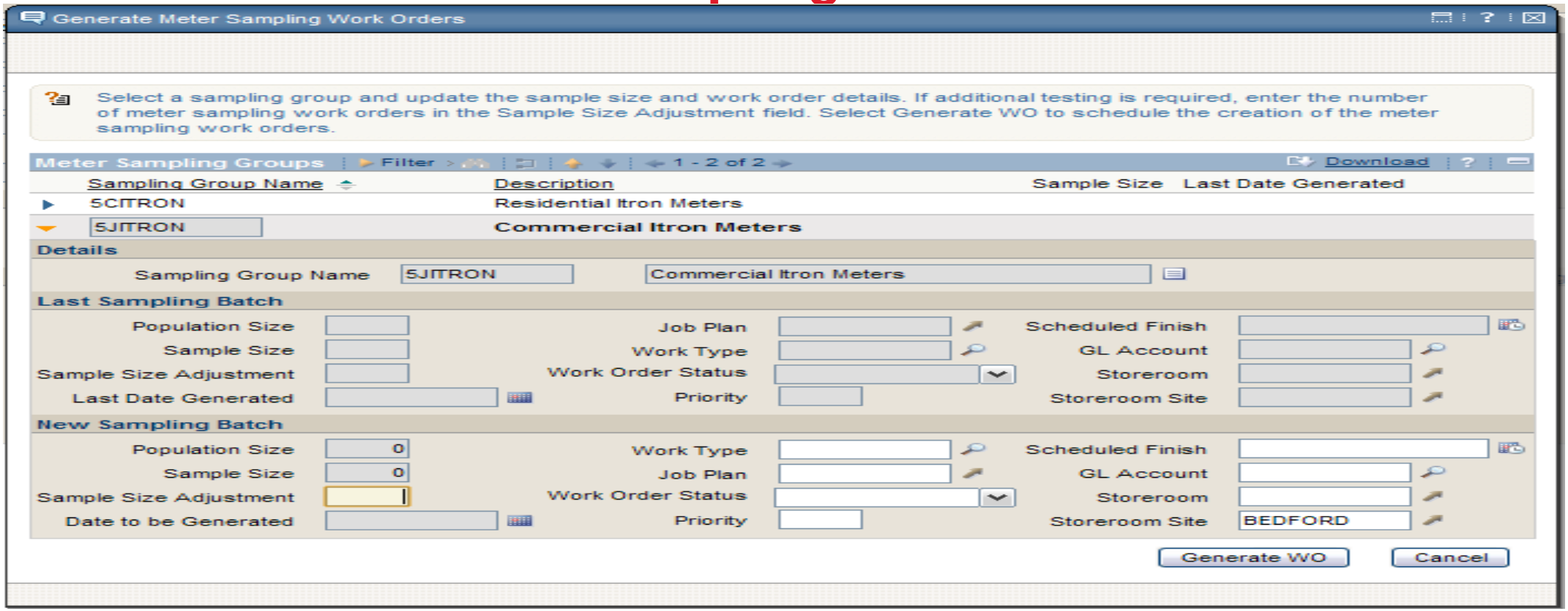
Templates determine the number of meters that will be sampled depending on the population size. Both linear and non linear sampling templates can be defined.

Define Meter Sampling Groups



- Homogeneous groups of meters that will be sampled according to the assigned sampling template.
- Supports the ability to define a sampling group by a SQL statement.
- Supports the ability to update the sampling group field for all asset records that match the SQL statement.
- Supports recalculating the population of assets assigned to a meter sampling group.
- Supports online or in background processing.

Generate Meter Sampling WO



- This dialog displays the last sampling batch details for reference.
- This dialog allows user to define the work order details for the sampling work orders that will be created.
- A cron job will create the work orders in the background after the user selects the Generate WO button.

Q u e s t i o n s ?

Terry Saunders (terry.saunders@us.ibm.com) for general product questions

Gary Cooper (gcooper@us.ibm.com) for Maximo Spatial questions (GIS)

Jerry Miller (jerrym1@us.ibm.com) for Utilities T&D questions

Ron Wallace (ron.wallace@us.ibm.com) Utilities & EAM Marketing

Dianne DePuy (ddepuy@us.ibm.com) Utilities Industry Leader

Kim Woodbury (kwoodbur@us.ibm.com) for commercial & product questions

Don Fenhagen (fenhagen@us.ibm.com) for Spatial Implementation questions

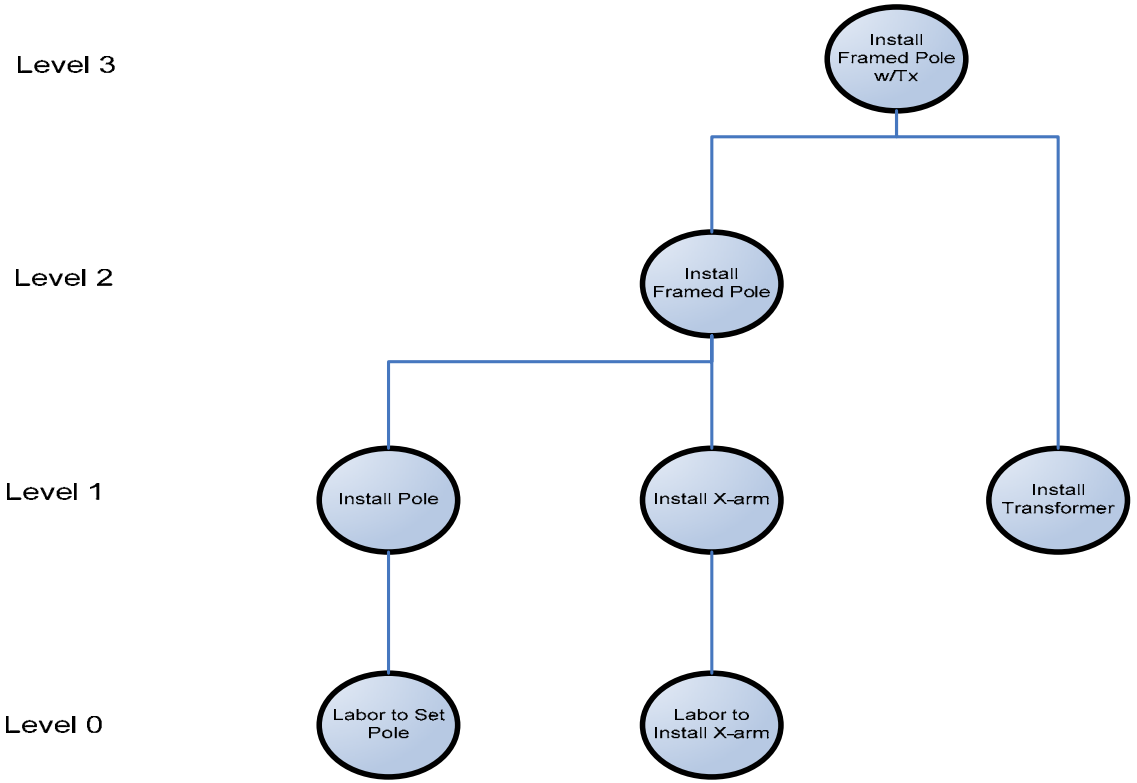
IBM

Let's build a smarter planet

Maximo for Utilities CU Library Details

- Provide Designers and Engineers with a standards-based means to estimate labor, materials, services and tools to complete construction work.
- Capture costs of doing that work and the proper accounting.
- Filter concept supports the variables associated with site conditions.
  - Supports 10 levels of parent child relationships.
  - Recommended best practice is to align the top level CU's with the organizations construction standards.
- There can be one to many relationships among CUs
- Each CU is version controlled and only one version can be active at a time

Maximo for Utilities CU Library Sample Hierarchy



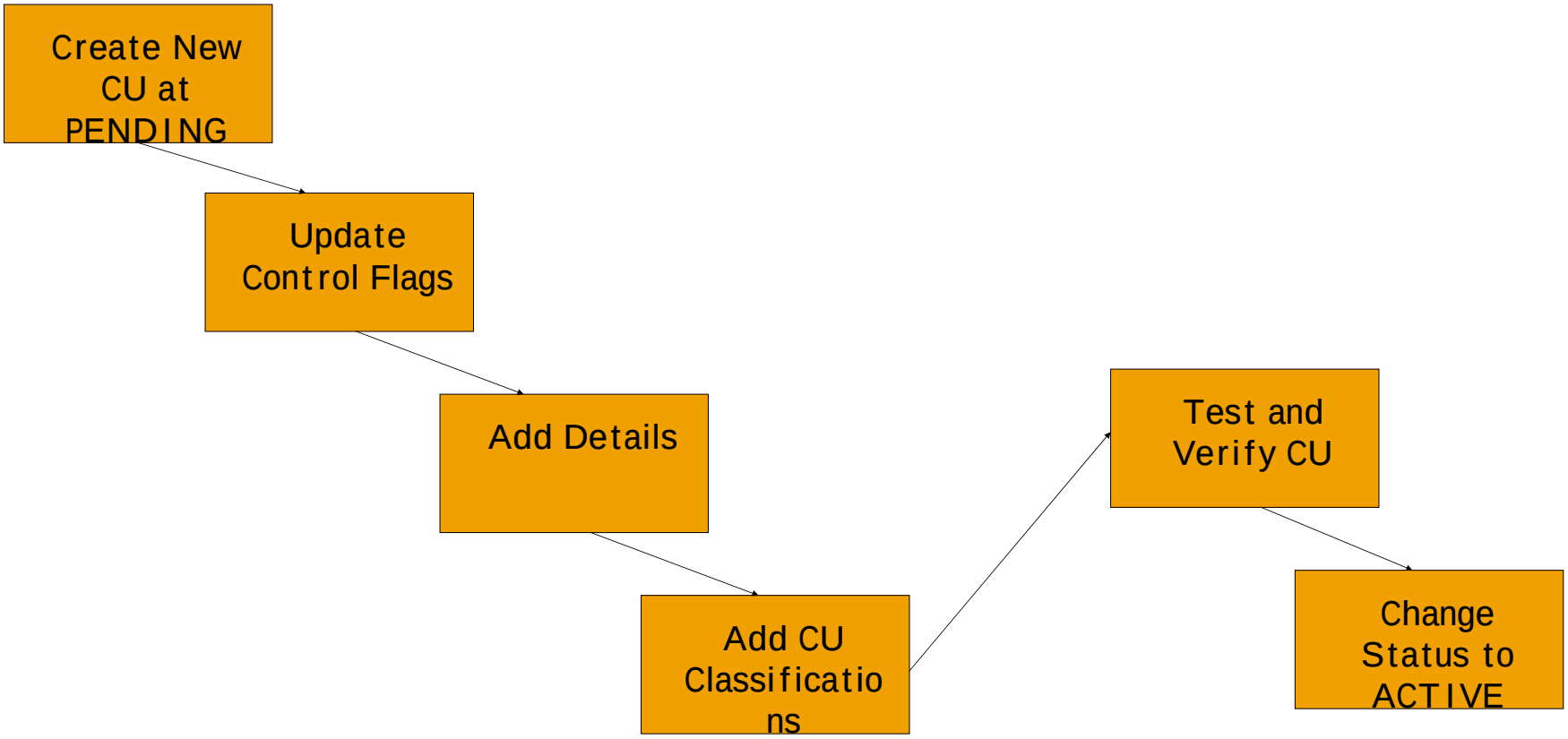
The compatible unit library supports 10 levels for maximum flexibility. This is a distribution example. A substation example might use 5 levels.

Macro units or compatible unit groups

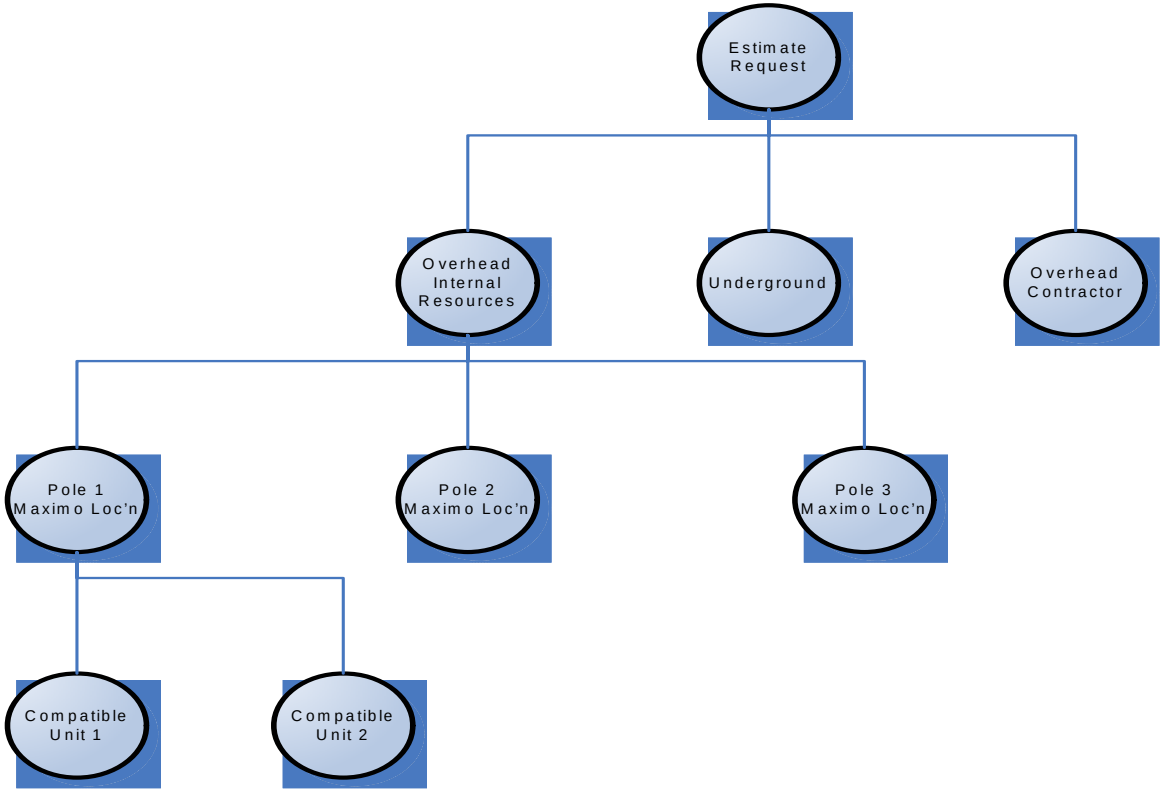
Compatible Units

Labor Units are associated to contract lines allowing the user to copy an estimate of internal resources and cost and quickly re-estimate using a specific outside contractor

Maximo for Utilities CU Library Business Process



Maximo for Utilities CU Estimate Sample Hierarchy



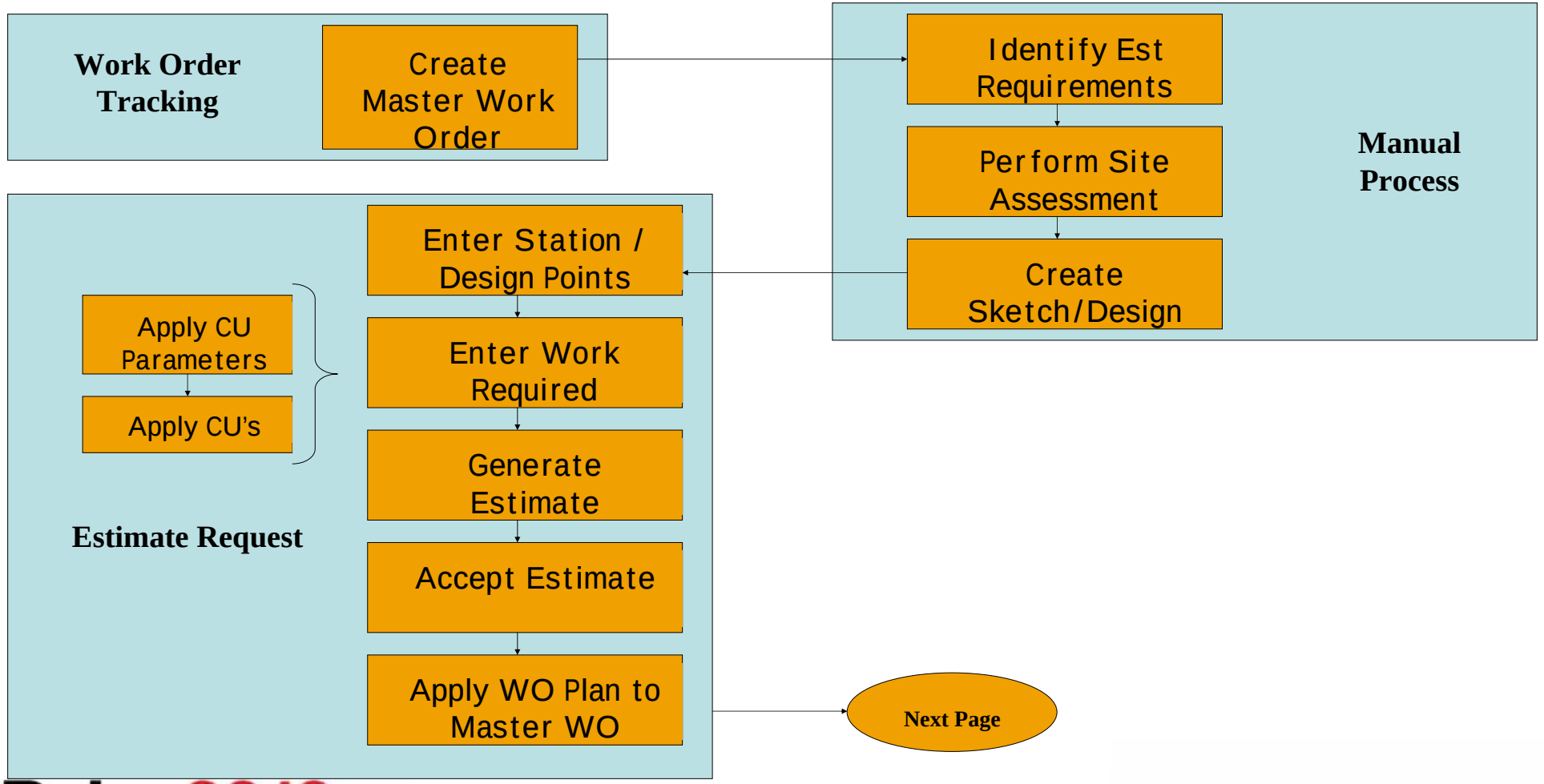
A new estimate request is created for each project.

Different versions can be created to compare costs of different designs. The filters facilitate copying an estimate and re-estimating with different site conditions (such as rock trenching).

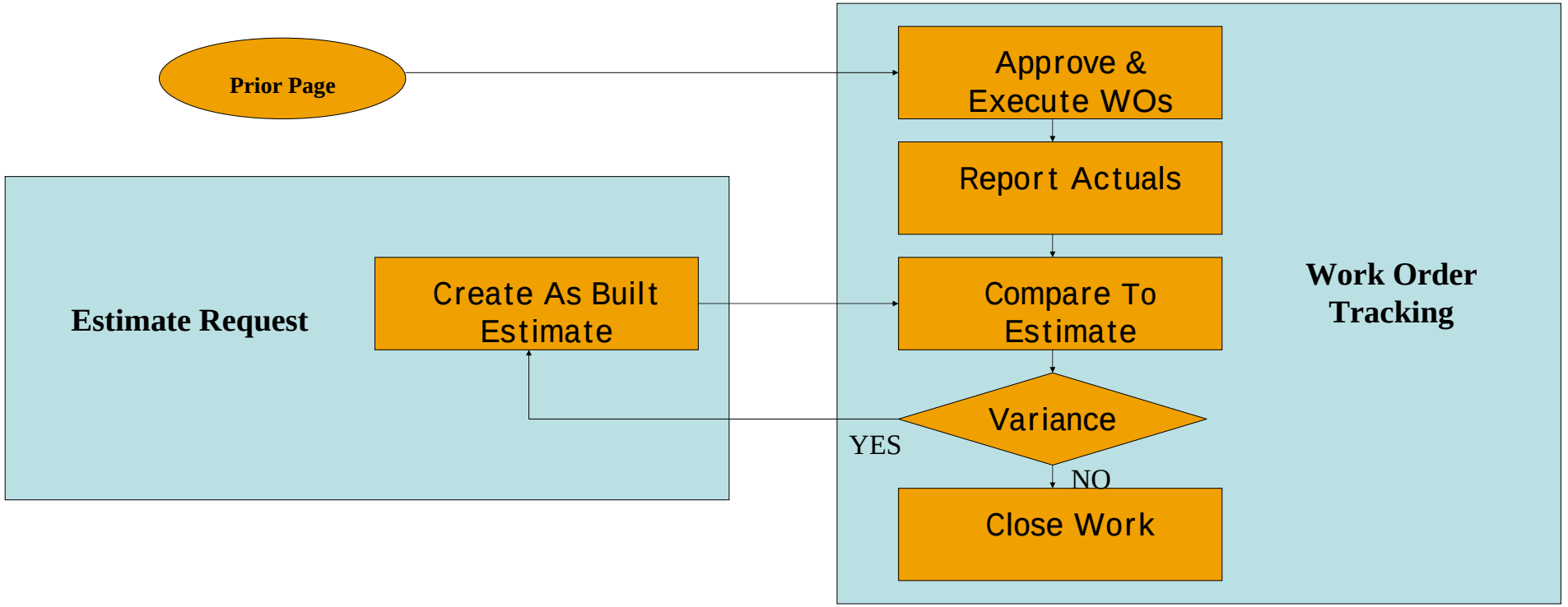
Stations or design points are locations where work is performed. These points can be associated to a Maximo location.

Compatible units are the basic estimating units which contain the labor, material and tool requirements. See the compatible unit library hierarchy.

Maximo for Utilities CU Estimate Business Process

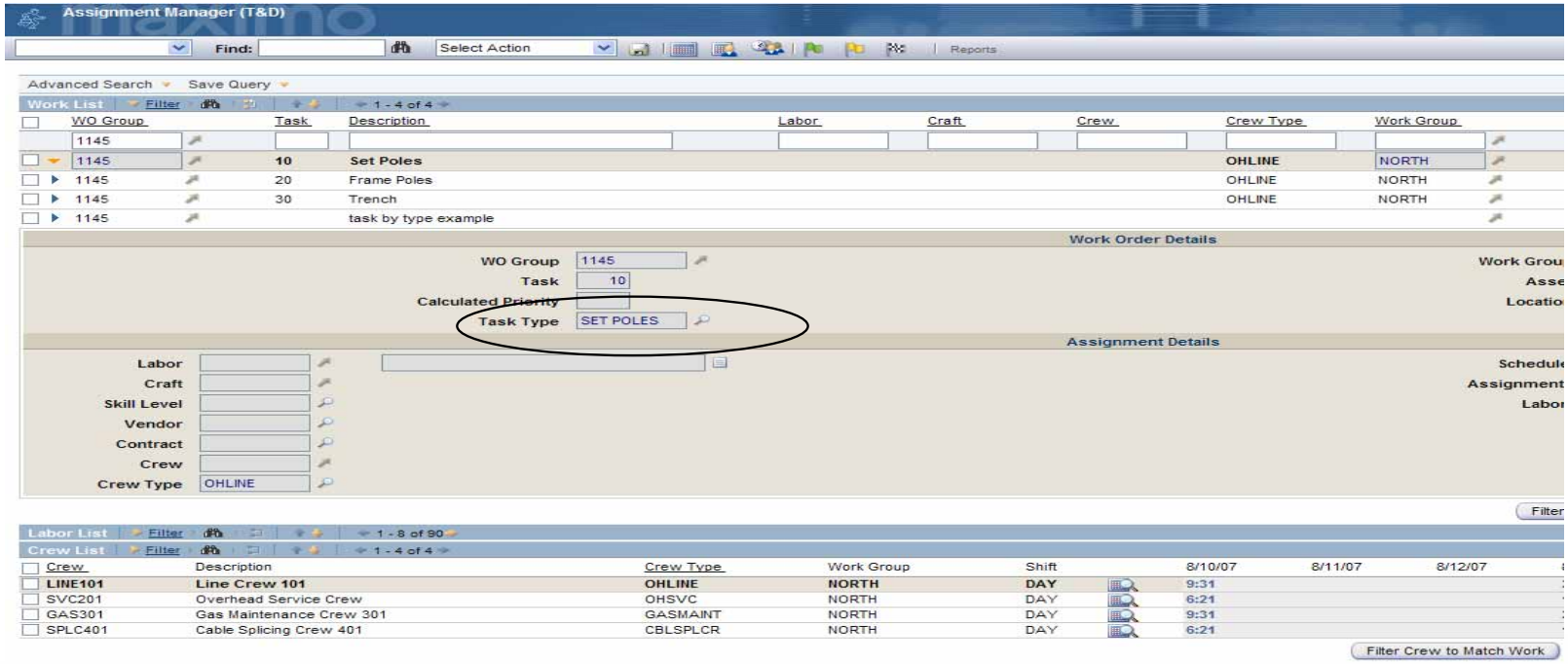


Maximo for Utilities CU Estimate Process Cont.



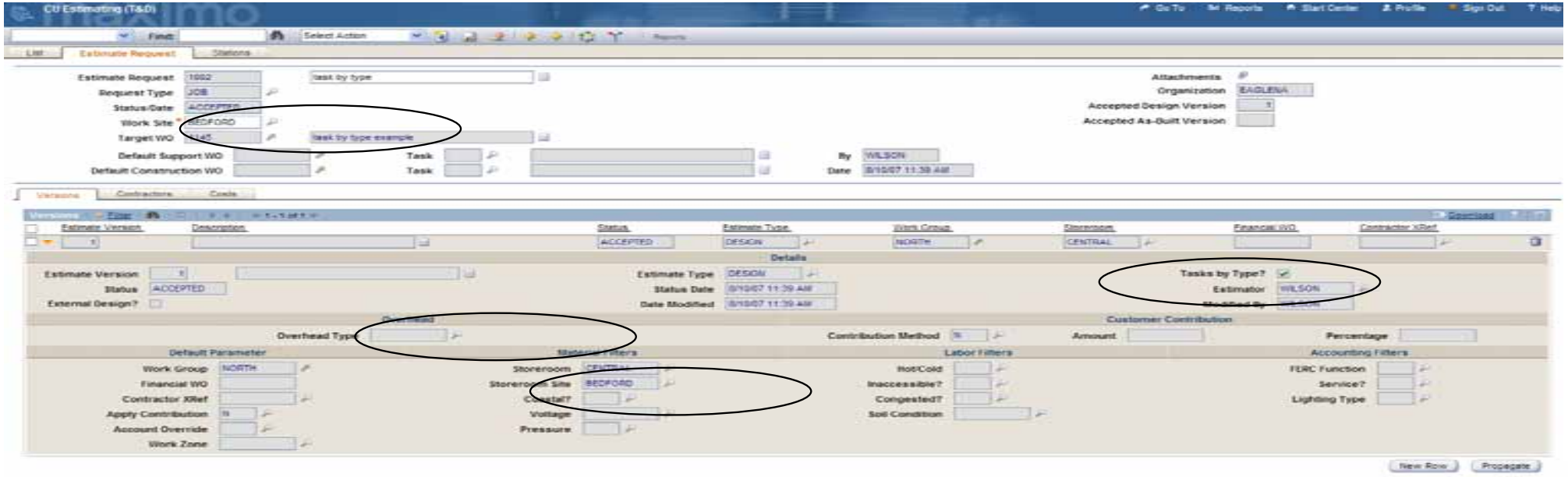
CU Estimating – Tasks by Type

- Assignment Manager
- The Task Types are logical groupings for the way the work is going to be performed which is different from the way it is estimated. Task Type was added to the Advanced Search Screen and is displayed in the detail section of the work list.



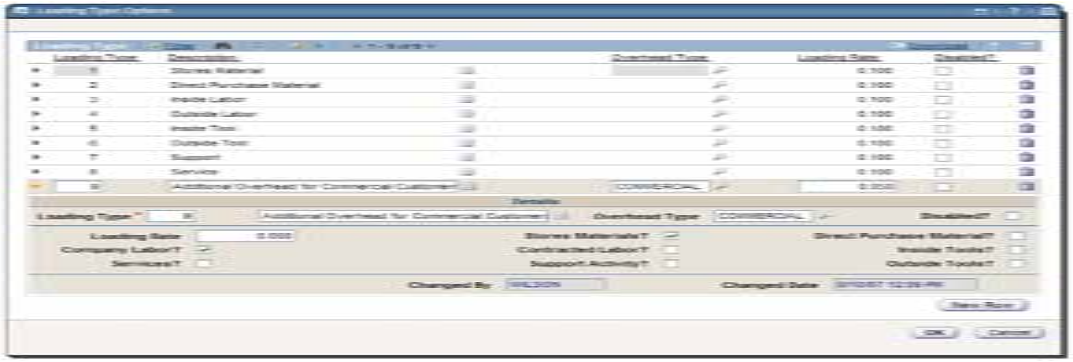
CU Estimating – Multi Site

- Support for Multi-site
  - Allow estimates to reserve materials from storerooms in another site (all changes for this application are shown below). This storeroom and site will be transferred to the target work order during Perform Acceptance.



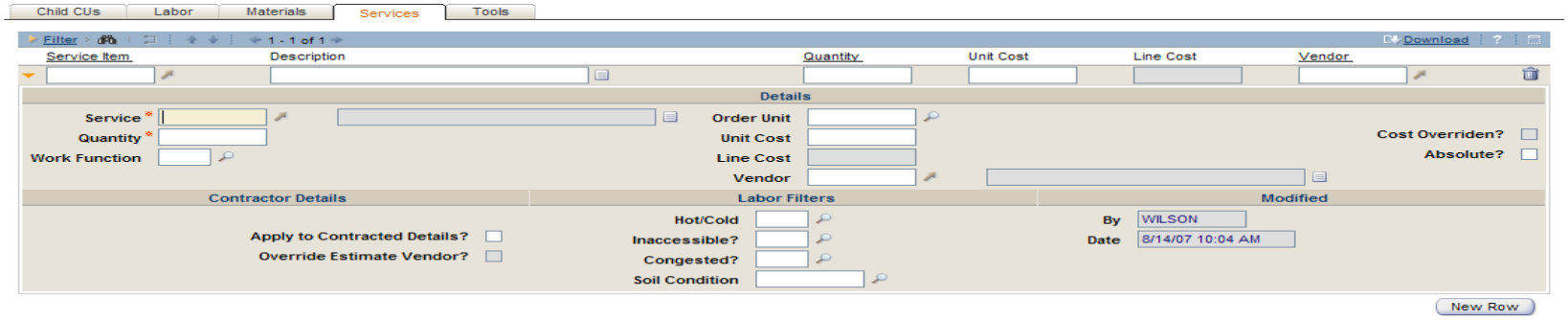
CU Estimating – Variable Overheads

- Added Variable Overheads
  - Allows more out of the box configuration of overheads
  - Record 9 is an overhead that will be applied when the user selects overhead type = commercial within the CU Estimating applicatio
    If the Overhead Type field is null on this screen the overhead will be applied to all CU Estimates
- Business Value – Can be used to change the overhead cost calculation for each Work Group.



CU Estimating – CU Services

- Added CU Services
  - Supports Maximo's standard services on CU's for costs such as police details, tree trimming and road repairs after trenching



Maximo for Utilities Crew Applications

- Planning/Crew Type
  - Define the basic crew template in terms of craft, qualifications and tools.
- Resources/Crew Management
  - Create actual crew record using Crew Type as a basis.
  - Assign labor and tools to the Crew
- Work Order/WO Tracking (T&D) & Planning/Job Plans (T&D)
  - Extended base solution to support Work Groups, Crew Types and Crews.
- Work Order/Assignment Manager (T&D)
  - Extended base solution to support assigning Crews to work orders and to filter by Work Group
- Labor Reporting (T&D) and Quick Reporting (T&D)
  - Extended base solution to support entering time by crew. This will create the labor and tool transactions for the resources assigned to that crew for the work date.

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