

Terry L. Saunders – Worldwide Utilities Industry Leader

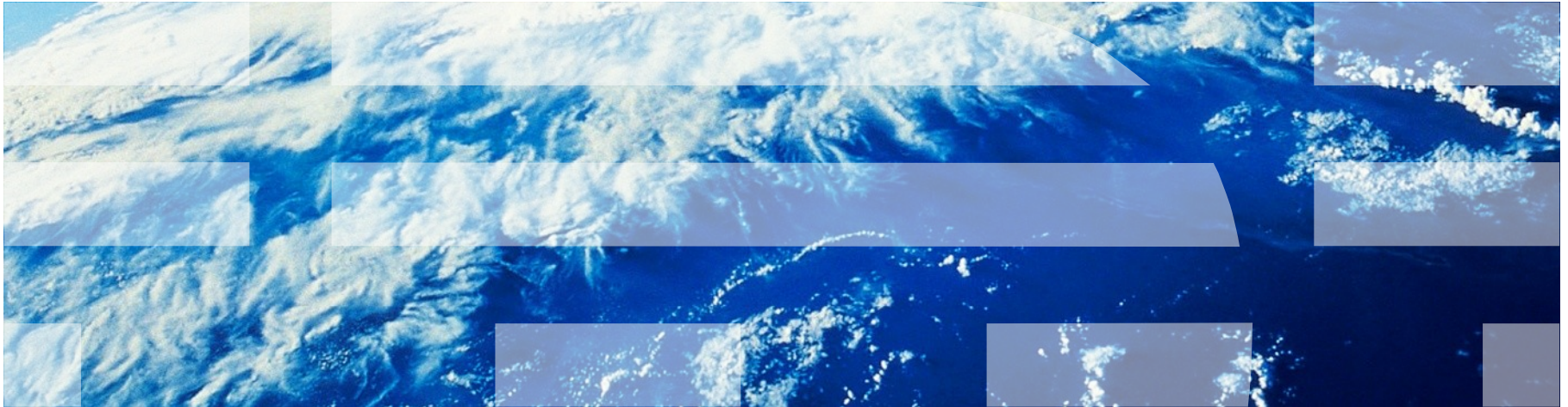
Vinicius Garmatz – Maximo Utilities Product Architect

João Souto Maior – Maximo Spatial Product Architect



IBM Maximo for Utilities

Sep 11, 2012



Let's build a smarter planet

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 operation with advanced technologies.
- The Maximo 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 CUE in Maximo v4
- Maximo for Utilities 5.2 release in 2004 with Compatible Units Estimating and Crew Management in 2005 for v6
- Maximo for Utilities 6.1 added product GIS integration to ArcGis server supporting GeoSpatial capabilities for Maximo asset/work management
- Maximo for Utilities 7.1.1 added CPM for Crews using Scheduler and Service Address application for geocoding
- Maximo for Utilities 7.1.2 added Meter Asset and Work Management.
- 7.5 – Meter Alarms and Regulatory Support such as, NERC/CIP
- 7.5.0.1 Supports Maximo Scheduler for Planning Routing and Dispatch – FFM
- Focused on Optimization, FFM, CIM and Mass Smart Meter Deployment



- **MUWG** is a utility industry sponsored working group that provides a forum for **Maximo** users to exchange information, methods and experiences, improve asset and work management practices and processes in the utility work place. This exchange of information is designed to improve the knowledge, use, practices and methods, so as to optimize use of **Maximo's** capabilities.
- User group session will be hosted by Luminant in Dallas, TX – **Oct 23 and 24, 2012**
- www.muwg.org
- Some clients and development partners, include:



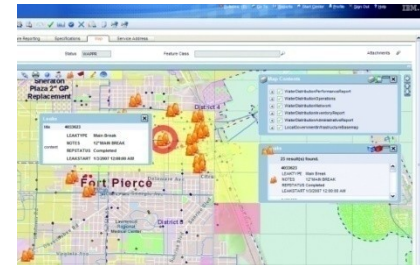
- **Supports work and asset management for transmission and distribution in water, gas and electric utilities.**
 - Helps increase asset and resources effectiveness by providing a platform to support all types of asset classes and all types of work in water, gas and electric utilities.
 - Create detailed 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.

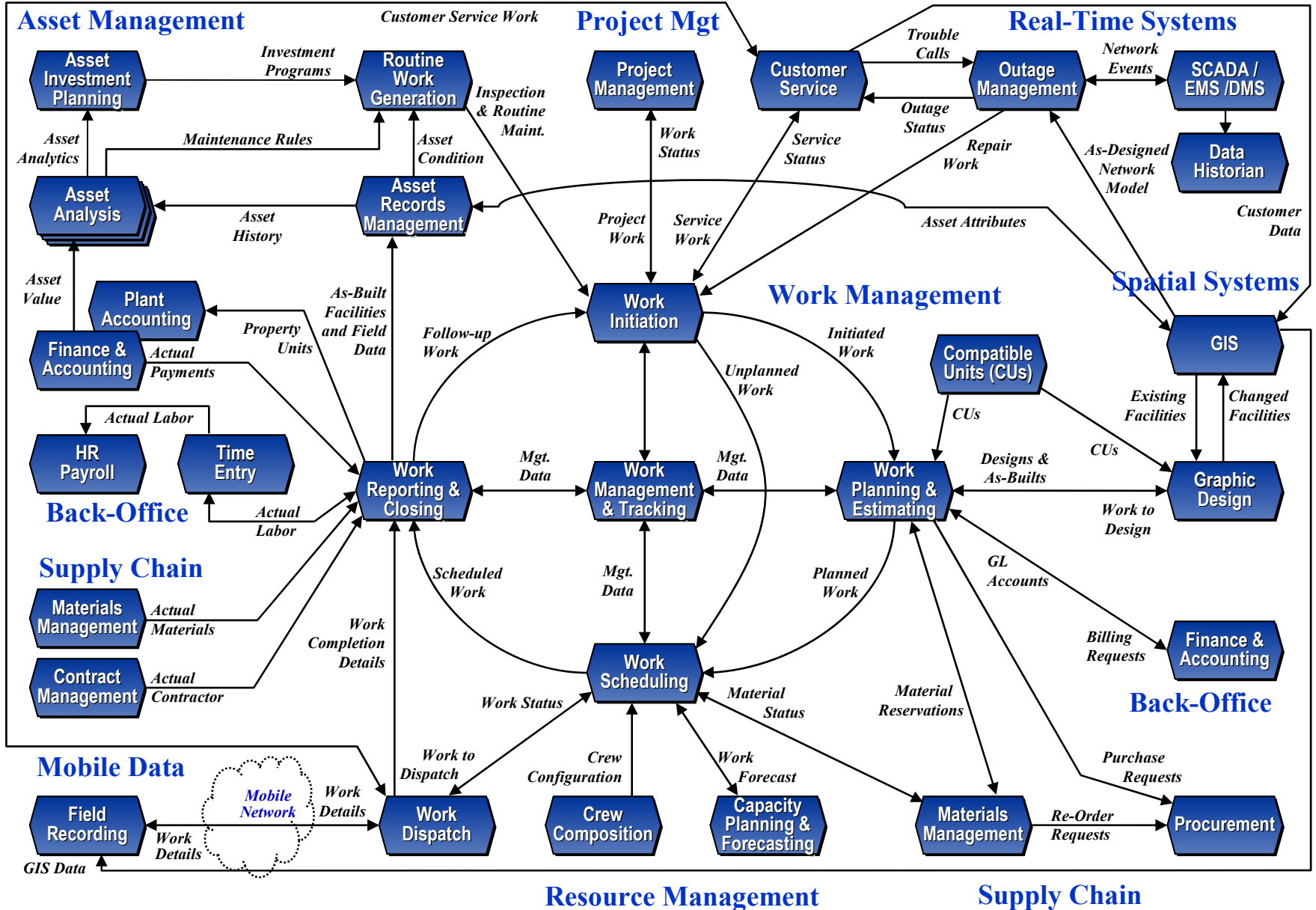
Maximo Product Industry Solutions and add-on products typically valued by Utilities

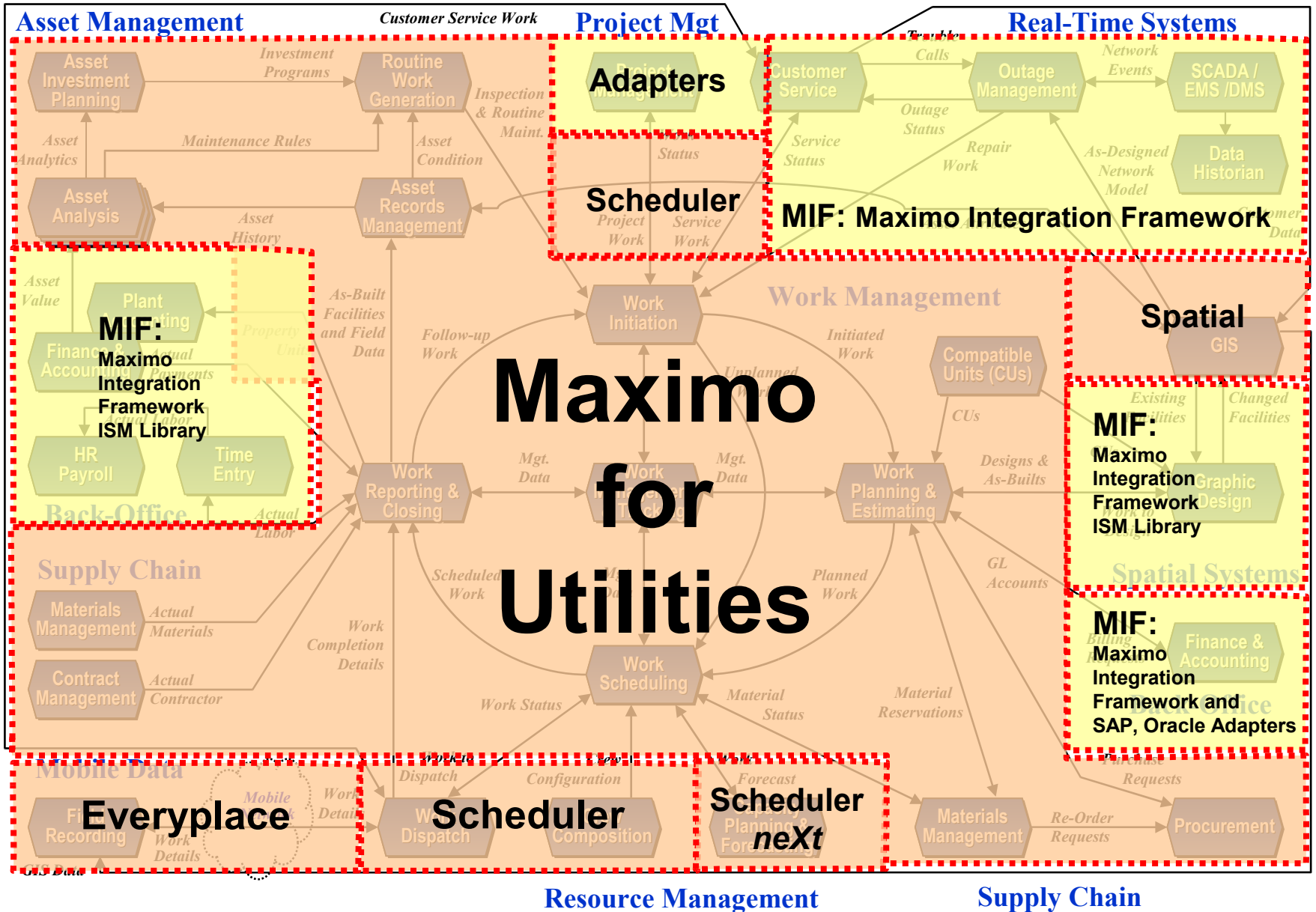


- **Maximo Asset Management** – normally used in fossil, hydro and renewable generation
- **Maximo for Utilities** – normally used to support Transmission and Distribution
- **Maximo for Nuclear Generation** – used for the Nuclear fleet and also sometime in fossil for:
Operations Management Functions: Duty Stations: Shift turnover, rounds & readings,
Clearances; Permits; Condition Reports.
- **Maximo for Transportation** – used for fleet asset and work management
- **Maximo Health Safety and Environment** – Incident Investigation, Risk Assessment and Mitigation, Operator logs and policy.
- **Maximo Scheduler** – PM and Workload Forecasting, Resource Availability: Skills, Materials, Tools, Assets; Labor and Crew Scheduling, Dispatching and Mobile Workforce Management
- **Maximo Everyplace** – Tablets and Smartphones, always connected – supported with Maximo Designer for correct form factor screen designs.
- **Maximo Mobile** – Work Reporting, Inspections and Inventory – Connected and Disconnected store and forward
- **Maximo Service Provider** - Manage customer work and assets and billing for services

- CU (Compatible Unit) Library and Estimating – Standards based estimating
- Crews – provide full support for crews (a collection of resources working together) from definition to close
- Crew functionality support for Maximo Scheduler add on
- Integration Framework – interfaces for Maximo downloadable from IBM Integrated Service Management Library:
<http://www-01.ibm.com/software/brandcatalog/ismlibrary/>
 - Mobile Work Force Management
 - Graphical Design Tool
 - Fixed Assets
- Support for Meter Asset Management
- Task prerequisites for administrative activities
- Support for Regulatory Standards – NERC/CIP
- Web service for meter alarms
- Includes Maximo Spatial Asset Management 7.5 entitlement
- 7.5.0.1 Supports Scheduler add-on for Planning, Scheduling, Routing and Dispatching:
FFM Field Force Management







Maximo for Utilities – Crew Management

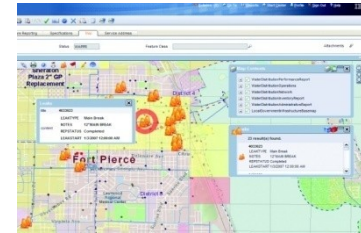


+

Maximo Service Provider & Spatial – Service Address

+

Maximo Spatial Asset Management – Mapping Technology



+

Maximo Scheduler with ILOG – Scheduling & Routing Optimization

+

Maximo Everyplace - Mobility



+

Dedicated Design, Development, Customer Involvement and Direction

=

Maximo Scheduler: Planning, Scheduling, Routing, Dispatch

Released 6.3 September 2007	Released 7.1 December 2008	Release 7.1.1 December 2009	Release 7.1.2 November 2010
<ul style="list-style-type: none"> • Services for CUE • Multi-site Support <p><u>GIS Spatial Release</u></p> <ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • Port to Maximo 7 • Variable OH Cost For CU's • Associate CU's to Task Type • Specific Spatial Install • Map Tips • Graphic interaction On Map between Feature & Result Set • Spatial SigOption Security • Supports ESRI ArcGIS Server 9.3 	<ul style="list-style-type: none"> • Enhance CUE Perform Acceptance • UI Improvements • Scheduler for Crews <ul style="list-style-type: none"> • 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 • Supports ESRI ArcGIS Server 9.3.1 	<ul style="list-style-type: none"> • Work Order Pre-requisites • Meter Asset Lifecycle Mgmt <ul style="list-style-type: none"> • Bulk receipt • Import meter data • Meter Sampling • Bulk Deploy • Spatial Enhancements <ul style="list-style-type: none"> • Own roadmap
Maximo 6.2.3	Maximo 7.1.1.4	Maximo 7.1.1.6	Maximo 7.1.1.8

Release 7.5	Fixpack 7.5.0.1	Release 7.5.1	Release 7.neXt
April 2011	July 2012	July 2012	TBD
<p><u>Support for NERC-CIP Regulatory Standards</u></p> <p>Associate Asset Criticality</p> <p>Associate Regulatory Standard to PM s Work Orders s and Service Requests</p> <p>Support Meter Alarms: Web-service through Condition Monitoring: Tampering, Last gasp, Low Battery</p> <p><u>Support for EAM 7.5 and supporting products</u></p> <p><u>Supports Maximo Spatial 7.5*</u></p> <ul style="list-style-type: none"> • Extend Auto Create & Locate to Assets and Loc • Extend Map Tips – More links • Conf. Enhancements: Label definitions, Map Tips, • Editing in DEFAULT • Extend Redlining Support • Support Public Map Data • Supports ArcGIS Server 10 <p>•<u>PM Forecasting supports Crews in Scheduler Product Add-on</u></p>	<p><u>Accommodation Release for Utilities</u></p> <ul style="list-style-type: none"> • Migrating Crews into Core • Additional 62 Fixes included <p><u>Accommodation Release for Spatial</u></p> <ul style="list-style-type: none"> ▪ Migrate Service Address to Core Maximo ▪ Map Control, part of Core ▪ Moved to ESRI ArcGIS Javascript API version 2.8 ▪ Ability to add a map to any app, requires presentations changes & configuration defined on the wiki ▪ "Run Check Configuration" action now can be executed from Spatial Map Manager application ▪ Layer legends added to the "Map Contents" map widget ▪ Support for map scale bar, configured in Spatial Map Manager application ▪ Support for ESRI ArcGIS 10.1 and also support 10 	<p>Add-on Product*</p> <p><u>Maximo Scheduler Workforce Management Enhancements</u></p> <p>Dispatching Public Map UI Control Mobile Everyplace Applications</p> <p>Crew Management Service Address</p> <p>Graphical Assignment Schedule Compliance Assign other resources Asset /Location availability Work Order Actions</p> <p>* Sold as an Add-on to Maximo</p>	<p><u>Future Development:</u></p> <ul style="list-style-type: none"> • Utilities Attachments and Joint Use including Street Lighting • CIM Common Information Model Supported Web Services • WO Crediting & Unit Reporting • Capital Work Planning and Forecasting • Vegetation Management with the use of Spatial • Mass Meter Deployment
Maximo 7.5	Maximo 7.5.0.3	Maximo 7.5.0.3	



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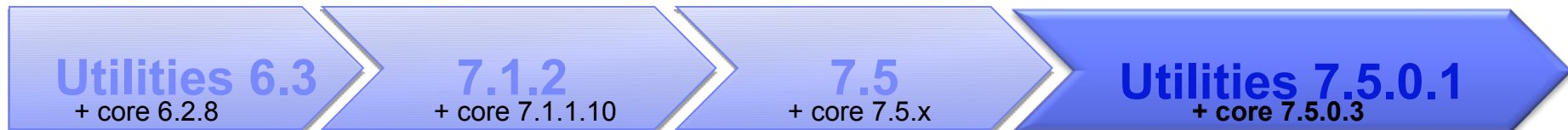
- **Accommodation of Crews into Maximo EAM / Core**
 - Crews functionality is being migrated to Maximo and this should become transparent to Utilities users
- **APARs / Fixes included into the product**
 - 62 Issues being fixed as part of the fixpack
- **Exploratory Tests in Utilities product**

- **Applications being removed from Utilities product**
 - Labor Reporting (T&D)
 - Quick Reporting (T&D)
 - Assignment Manager (T&D)
 - Crew Types (T&D)
 - Crew Management (T&D)

- **Items migrated to Core apps:**
 - Stored queries, that will need to be manually reviewed by customers to use the correct field and table names
 - Custom reports will need to be reviewed as well
 - Bookmarks

- **What had changed?**
 - Table and field names: removal of PLUSD prefix, changed to AM
 - Class structure: from psdi.plusd.app... to ibm.tivoli.maximo...

- **Before installing the 7.5.0.1 fixpack, you must have:**
 - IBM Maximo for Utilities v7.5
 - IBM Maximo Asset Management v7.5.0.3
- **Scenario 1: using EAM v7.5.0.3 with Utilities v7.5** 
 - You'll have two crews functionality in the Maximo database, although only the Utilities (T&D) will be enabled
- **Scenario 2: using EAM v7.5.0.3 with Utilities v7.5.0.1** 
 - You'll have only one crew functionality in the Maximo database, from EAM / Core without the PLUSD prefixes in the database and (T&D) suffixes in application names
- Customers using SCCD or core 7.1.1.11 should wait for core fixpack 7.5.0.4 to install Utilities 7.5.0.1



Receiving (T&D)

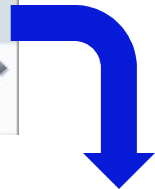
ITRON Find: Select Action

List Material Receipts Service Receipts

PO: 1097 >> Acquire 10 new JTron Me

Company: ITRON ITRON

- Change Inspection Status
- Receive Rotating Items
- Receive Rotating Items in Bulk
- Unit of Measure and Conversion
- Move/Modify Assets



Enable the bulk receiving of rotating items. Leverage the MIF to import ASN

Receive Rotating Items in Bulk

Enterprise Services Filter > 1 - 1 of 1 Download

External System	Enterprise Service	Description	Adapter
PLUSDTND	PLUSDMXRCVROTITMInterface	Interface to receive Meter Assets	MAXIMO

XML File Import Preview?

Flat File: Delimiter: File-based Error Management?

Text Qualifier:

Specify Import File D:\Users\IBM_ADMIN\Documents\IBM Selecionar archivo...

OK Cancel

Smart Meters Lifecycle – Inventory Usage (T&D)



Split Usage Quantity

The quantity requested exceeds the bin's current balance. Select multiple bins to source items from, or specify rotating assets for the current usage line. You can click Auto-Split to automatically select the additional bins or rotating assets.

Usage Lines Download

Line	Rotating?	Item	Description	Usage Type	Quantity	From Bin	From Lot	Current Balance	Total Current Balance	Total Avail. Balance
1	<input checked="" type="checkbox"/>	JTRON5C	JTron Meter 5c	ISSUE	5.00	ABC		10.00	10.00	10.00

Select Rotating Assets1 for Download

Line	From Bin	Quantity	Rotating Asset	New Asset Number
...No rows to display...				

[New Row](#)

Create new assets from existing rotating items

Select Multiple Assets Auto-Split OK Cancel

Vendor: »

Manufacturer: »

Purchase Order: »

Serial Number From:

Serial Number To:

Refine

Assets Download

<input checked="" type="checkbox"/>	Asset	Description	Site	Rotating Item	Serial Number
<input checked="" type="checkbox"/>	4020	JTron Meter 5c	BEDFORD	JTRON5C	
<input checked="" type="checkbox"/>	4021	JTron Meter 5c	BEDFORD	JTRON5C	
<input checked="" type="checkbox"/>	4022	JTron Meter 5c	BEDFORD	JTRON5C	
<input checked="" type="checkbox"/>	4023	JTron Meter 5c	BEDFORD	JTRON5C	
<input checked="" type="checkbox"/>	4024	JTron Meter 5c	BEDFORD	JTRON5C	

Add All to Issue or Transfer OK Cancel

Meter Assets (T&D)

Find: Select Action

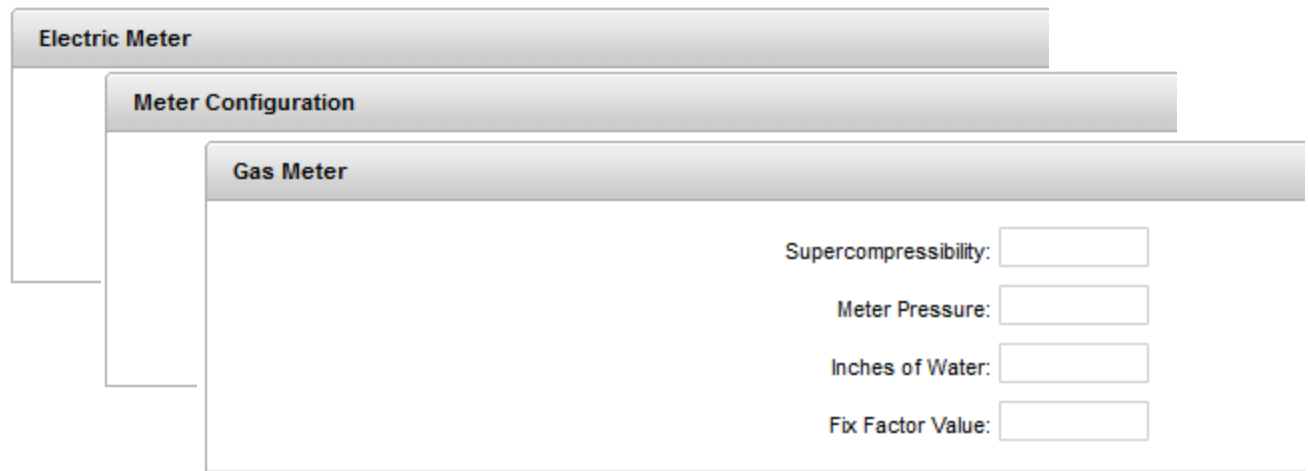
List Meter Asset Test Results Spare Parts Alarms Specifications Features Relationships Work

Advanced Search Save Query Bookmarks

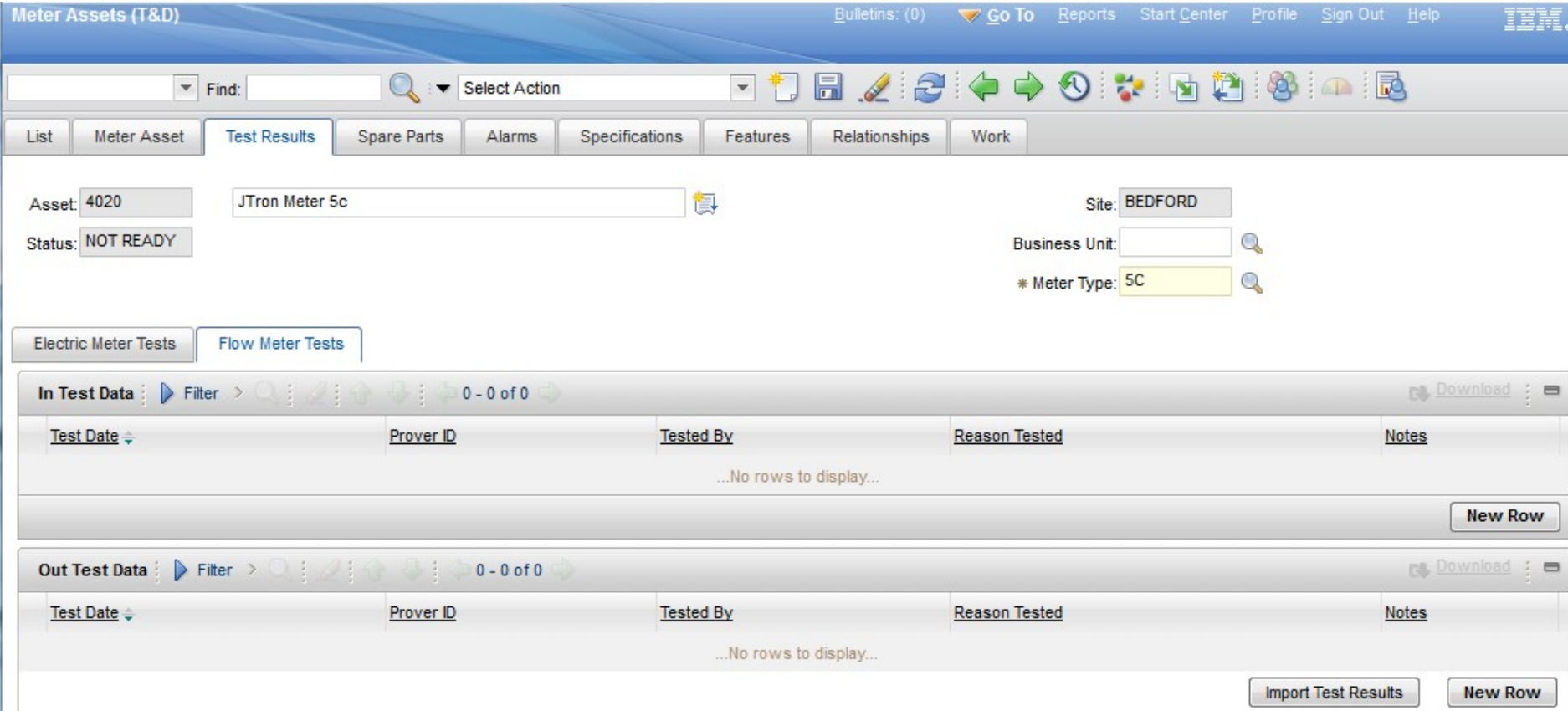
Assets Filter 1 - 5 of 5

Asset	Description	Serial #	Loop Location	Street Address
>=4020	>>			>>
4020	JTron Meter 5c			
4021	JTron Meter 5c			
4022	JTron Meter 5c			
4023	JTron Meter 5c			
4024	JTron Meter 5c			

Meter Assets application centralizes all the related Meter information, with specific details for Gas/Electric meters ...



Smart Meters Lifecycle – Meter Assets (T&D) – Test Results



The screenshot displays the 'Meter Assets (T&D)' application interface. At the top, there is a navigation bar with 'Bulletins: (0)', 'Go To', 'Reports', 'Start Center', 'Profile', 'Sign Out', and 'Help'. Below this is a search bar with 'Find:' and a 'Select Action' dropdown. A toolbar contains various icons for document management and navigation. The main content area has tabs for 'List', 'Meter Asset', 'Test Results' (selected), 'Spare Parts', 'Alarms', 'Specifications', 'Features', 'Relationships', and 'Work'. The 'Test Results' tab shows details for 'Asset: 4020' (JTron Meter 5c) and 'Status: NOT READY'. It also displays 'Site: BEDFORD', 'Business Unit:', and '* Meter Type: 5C'. Below the details are two sections for test data: 'Electric Meter Tests' and 'Flow Meter Tests'. Each section has a 'Filter' button and a 'Download' button. The 'In Test Data' section shows a table with columns 'Test Date', 'Prover ID', 'Tested By', 'Reason Tested', and 'Notes', with the message '...No rows to display...'. The 'Out Test Data' section also shows a table with the same columns and the message '...No rows to display...'. At the bottom right of the 'Out Test Data' section, there are buttons for 'Import Test Results' and 'New Row'.

... including the ability to import test results. The meter alarm information come from Condition monitoring and can be integrated with any monitoring system using MIF as well.

Define Meter Sampling Template

Enter the meter sampling templates and identify either the sample percentage or the specific sample size. The Sample Percentage and Sample Size are mutually exclusive. If the Linear check box is selected either the Sample Percentage field or the Sample Size field is required. If the Linear check box is cleared, then the Sample Percentage field and the Sample Size field are read only and the threshold details are required.

Template Name	Description	Business Unit	Sample Percentage	Sample Size	Linear?	Valid Year	Disabled?
2PERCENT	2 Percent of all meters will be sampled		2.0000		<input checked="" type="checkbox"/>	2010	<input type="checkbox"/>
5PERCENT	5 Percent of all meters will be sampled		5.0000		<input checked="" type="checkbox"/>	2010	<input type="checkbox"/>
TEST1	1 random sampling work order will be created			1	<input checked="" type="checkbox"/>	2010	<input type="checkbox"/>
NONLINEA	<input type="text" value="Non linear example"/>	<input type="text" value="Business Unit"/>			<input type="checkbox"/>	2010	<input type="checkbox"/>

Business Unit

Enter the threshold values in decreasing order and the associated sample size. The maximum threshold value must be greater than the population size of the meter group.

Threshold details for Meter Template NONLINEA

Threshold	Description	Sample Size
1,000,000	Up to 1,000,000 meters	25,000
100,000	Up to 100,000 meters	3,000
10,000	Up to 10,000 meters	400
1,000	Up to 1000 meters	50

Defines the sampling sizes for Meter analysis

Define Meter Sampling Groups

Associate a sampling template with a sampling group. Define the condition to identify the meter asset records that are associated with the meter sampling group.

Sampling Group Name	Description	Population Size	Sampling Template	Condition	Exclude?	Disabled?
5JITRON	Commercial Itron Meters	0	5PERCENT	manufacturer = 'ITRON' and plusmetertype = '5J'	<input type="checkbox"/>	<input type="checkbox"/>
5CITRON	Residential Itron Meters	0	2PERCENT	manufacturer = 'ITRON' and plusmetertype = '5C'	<input type="checkbox"/>	<input type="checkbox"/>

Details

Sampling Group Name: 5CITRON Residential Itron Meters Exclude?

Population Size: 0 Disabled?

* Sampling Template: 2PERCENT

Condition: manufacturer = 'ITRON' and plusmetertype = '5C'

Update Sampling Groups

Only update records where Sampling Group is empty?

Run process in the background?

Update Sampling Groups

Recalculate Population OK Cancel

Create groups in where the sampling templates will be applied, in order to define a group

Generate Meter Sampling Work Orders

? Select a sampling group and update the sample size and work order details. If additional testing is required, enter the number of meter sampling work orders in the Sample Size Adjustment field. Select Generate WO to schedule the creation of the meter sampling work orders.

Sampling Group Name	Description	Sample Size	Last Date Generated
5CITRON	Residential Itron Meters		
5JITRON	Commercial Itron Meters		

Details

Sampling Group Name:

Last Sampling Batch

Population Size: Job Plan: >> Scheduled Finish:

Sample Size: Work Type: GL Account:

Sample Size Adjustment: Work Order Status: Storeroom: >>

Last Date Generated: Priority: Storeroom Site: >>

New Sampling Batch

Population Size: Work Type: Scheduled Finish:

Sample Size: Job Plan: GL Account:

Erase Sample Size? * Work Order Status: Storeroom: >>

Sample Size Adjustment: Priority: Storeroom Site: >>

Date to be Generated:

Then based on the sampling group and template, you can create work orders for every asset, randomly chosen to be inspected and the expected finish date for this inspection

- **Maximo Nuclear**
 - Presented by Joe Schipper on August 16th
- **Maximo Scheduler 7.5.1**
 - With Brian Downey and Nithyia Paramesawaran on September 25th
- **Crew Management**
 - With Lori Pilgrim on September 27th
- **Maximo Transportation**
 - With Carey Clark on October 2nd
- **Maximo Mobile and Everyplace**
 - With Dave Havicam on October 16th
- **Maximo Spatial 7.5.0.1**
 - With João Souto Maior on October 23rd (need reschedule due MUWG)
- **Recorded sessions are available at:**

<http://www-01.ibm.com/support/docview.wss?uid=swg27028563>

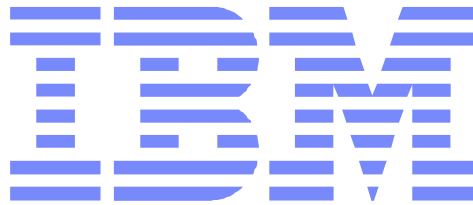
- Tivoli Documentation A-Z: Link for the documentation of all Maximo products for all 7x versions and, for some products like Utilities, also includes some previous versions as well
<http://www.ibm.com/developerworks/wikis/display/tivolidoccentral/Home#Home-M>
- Maximo Asset Management wiki:
<http://www.ibm.com/developerworks/wikis/display/maximo/Home>
- Maximo 7.5 System requirements:
<http://www.ibm.com/developerworks/wikis/display/maximo/System+Requirements+for+Maximo+Products>
- Maximo Upgrade Resources
<http://www.ibm.com/support/docview.wss?uid=swg21266217>
- IBM Support FixCentral
<http://www.ibm.com/support/fixcentral/>
- IBM RFE Community (Request for Enhancements)
<http://www.ibm.com/developerworks/rfe/>

Q u e s t i o n s ?

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

João Souto Maior (jmaior@br.ibm.com) for Maximo Spatial questions (GIS)

Vinicius Garmatz (vgarmatz@br.ibm.com) for Utilities T&D questions



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