IBM Maximo Spatial Asset Management

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Product Presentation

Maximo Spatial Asset Management

Vision

Enhance Maximo to support spatial analysis and visualization to manage assets across wide geographies..

Support s the design, construction, maintenance and work management for new and existing infrastructure in Utilities, Oil & Gas, Cities, Municipalities, States, Provinces, government and military organizations..

Further development is now focused on supporting Smart Grid and Smarter Planet, features and capabilities to maximize business operations with advancing technology

The Integration Framework supports the customer ecosystem of software products and future development will provide GIS interoperability.

Only vendor in the leader's quadrant in Gartner's Analysis of Enterprise Asset Management for Generation and Energy Delivery.

History

IBM Maximo worked with Business Partners to deliver GIS integration prior to Maximo 6

First release of Maximo Spatial Asset Management was packed with Utilities in v 6.3.3, adding a map tab to Assets, Locations, Work Orders and Service Requiests.

GIS integration to ESRI ArcGIS server supporting geo-spatial management capabilities for Maximo asset/work management system released as individual Product in December 2008.

Maximo for Spatial Asset Management 7.1.1 added Service Address application for premise geo-coding and new Architecture using the REST API in December 2009.

Default Version Editing and Secured Map Services added in Q4 2010.

Many enhancements planned for 2011 release

Maximo Spatial Supports DB2, Oracle & SQL Server.

Utility clients / development partners

Portland General Electric

DTE Energy

SRP Delivering More Than Power.

LAKELAND ELECTRIC Your Essential Link to a Quality Life

Colorado Springs Utilities It's how we're all connected

Maximo Spatial at a Glance

➤ Maps on Asset, Location, Service Request, Work Order and Service Address applications.

➤ Redlining, selection and query by attributes tools

➤ Maps configurable per Maximo site

➤ Multiple geodatabases support

➤ Security for map editing and visualization

➤ Enhances Maximo work flows, open map from data fields

➤ Tools for quick configuration and troubleshooting
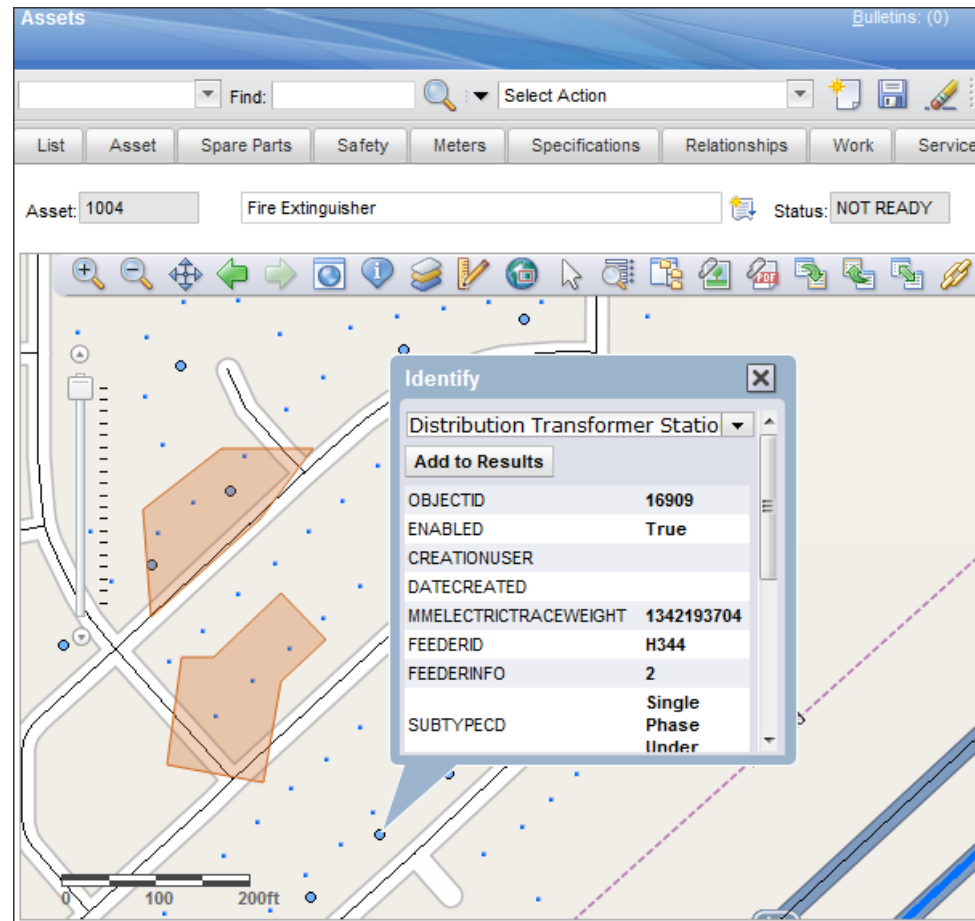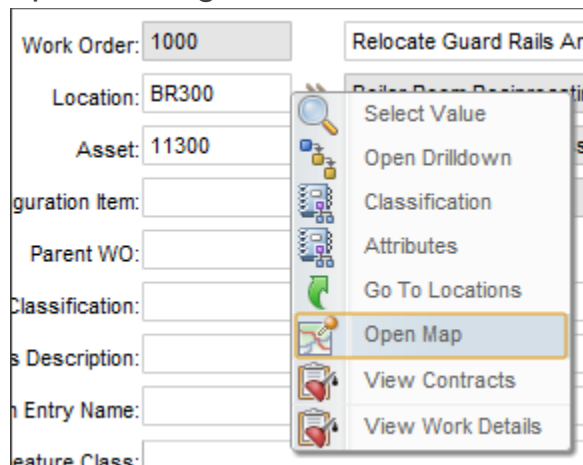
Capable of Supporting all Industry Solutions

Maximo Asset Management, Utilities and Oil & Gas built specifically to consume Spatial Asset Management

Energy & Utilities

Oil & Gas

Transportation

Industrial

Life Sciences

Public Sector

Support Work and Asset Management for Organizations with Geographically Dispersed Assets

- Delivers an integration framework based upon ESRI ArcGIS Server Technology that support future product development and customer extensions.

- Expose GIS Data to Maximo users and detailed Maximo work and asset business information to GIS users.

- Visualize GIS Assets and provide a geospatial context of work, assets and relevant land based features which impact reliability, longevity, and efficient work execution.

- Create and manage work orders related to mass property: utility poles, assets, vegetation management, infrastructure repairs, etc.

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Benefits of a single solution

- Access to geospatial data allows Service Management users to more easily and dynamically visualize the spatial relationships among managed assets and the roads, buildings, pipelines, and other mapped features around them, empowering levels of awareness and insight that tabular systems with dry numbers alone cannot provide

- Real-time integration of Maximo & ESRI's ArcGIS Server

- IBM has a long-time relationship with ESRI
  - Aligned vision technically
  - Sales and Implementation Support

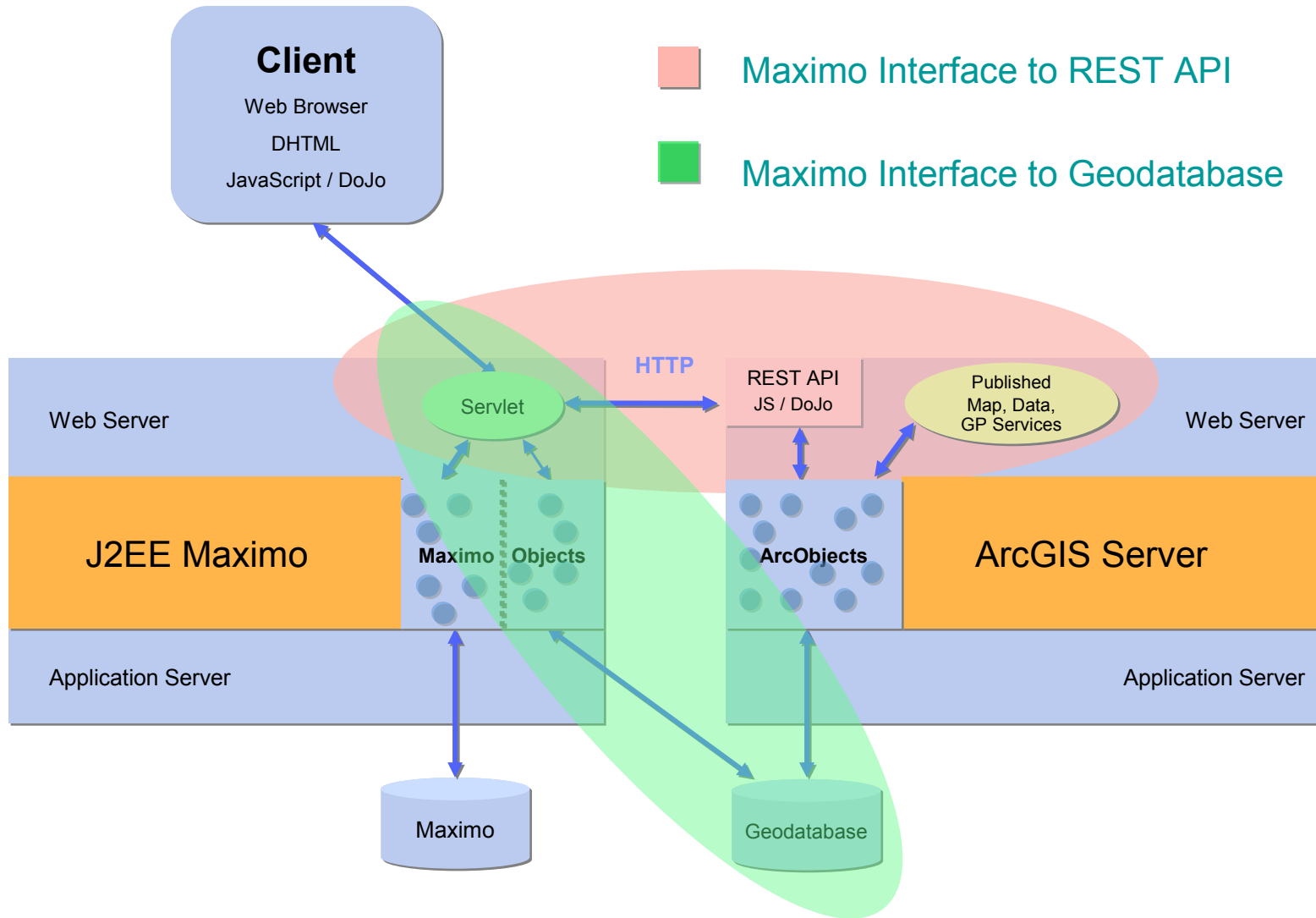# Visualizing assets, locations, work orders, and service requests

Maximo Spatial Asset Management extends the capabilities of the following IBM Maximo Asset Management applications by adding maps:

- **Assets and Assets (T&D)**
- **Meter Assets (T&D)**
- **Locations**
- **Work Order Tracking and Work Order Tracking (T&D)**
- **Service Requests**
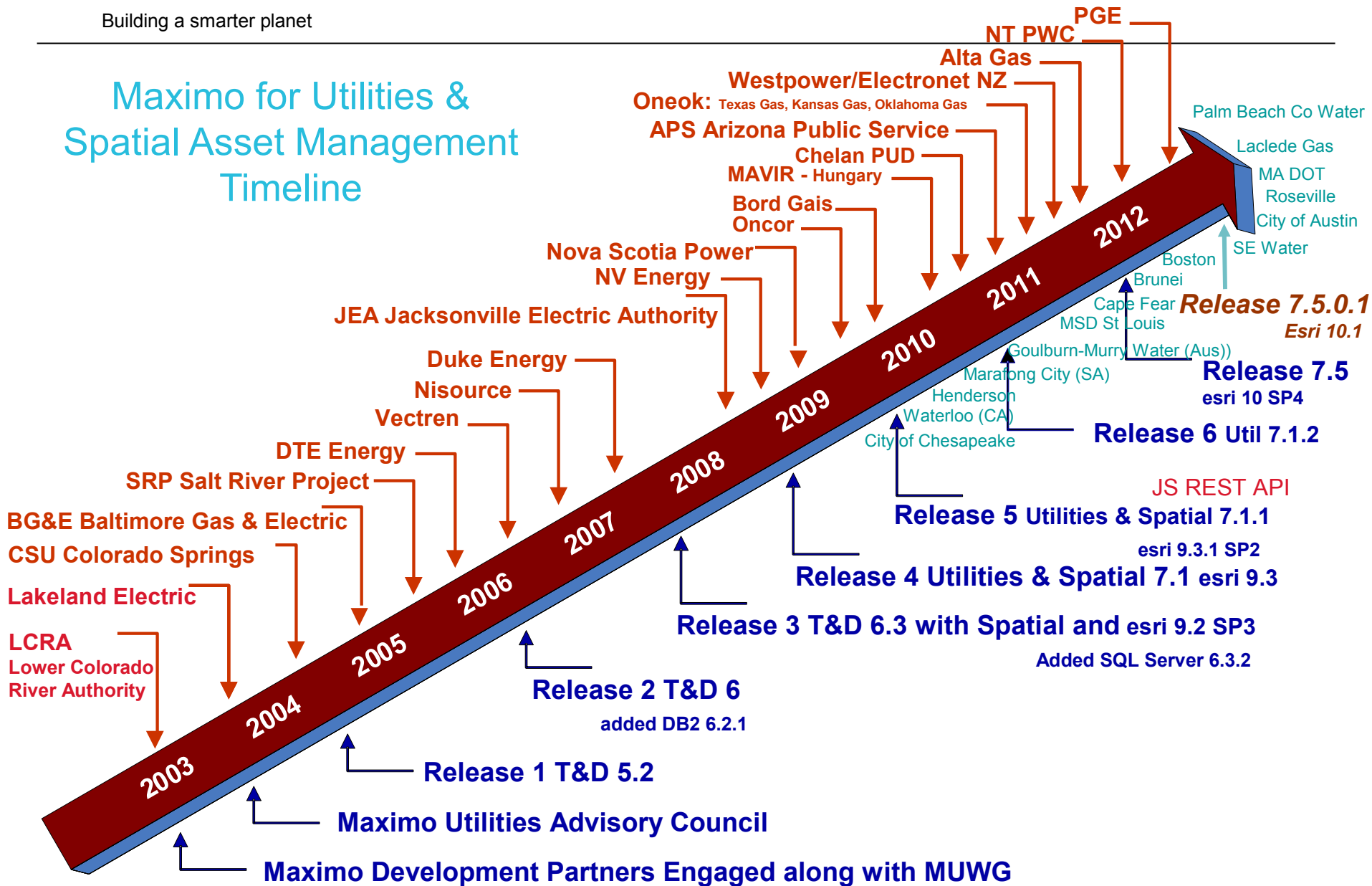- **Service Address (Spatial)**

On the Map tab, or in map windows that are opened from application records, content from the production geographic information system (GIS) and from linked Maximo Asset Management records can be displayed.
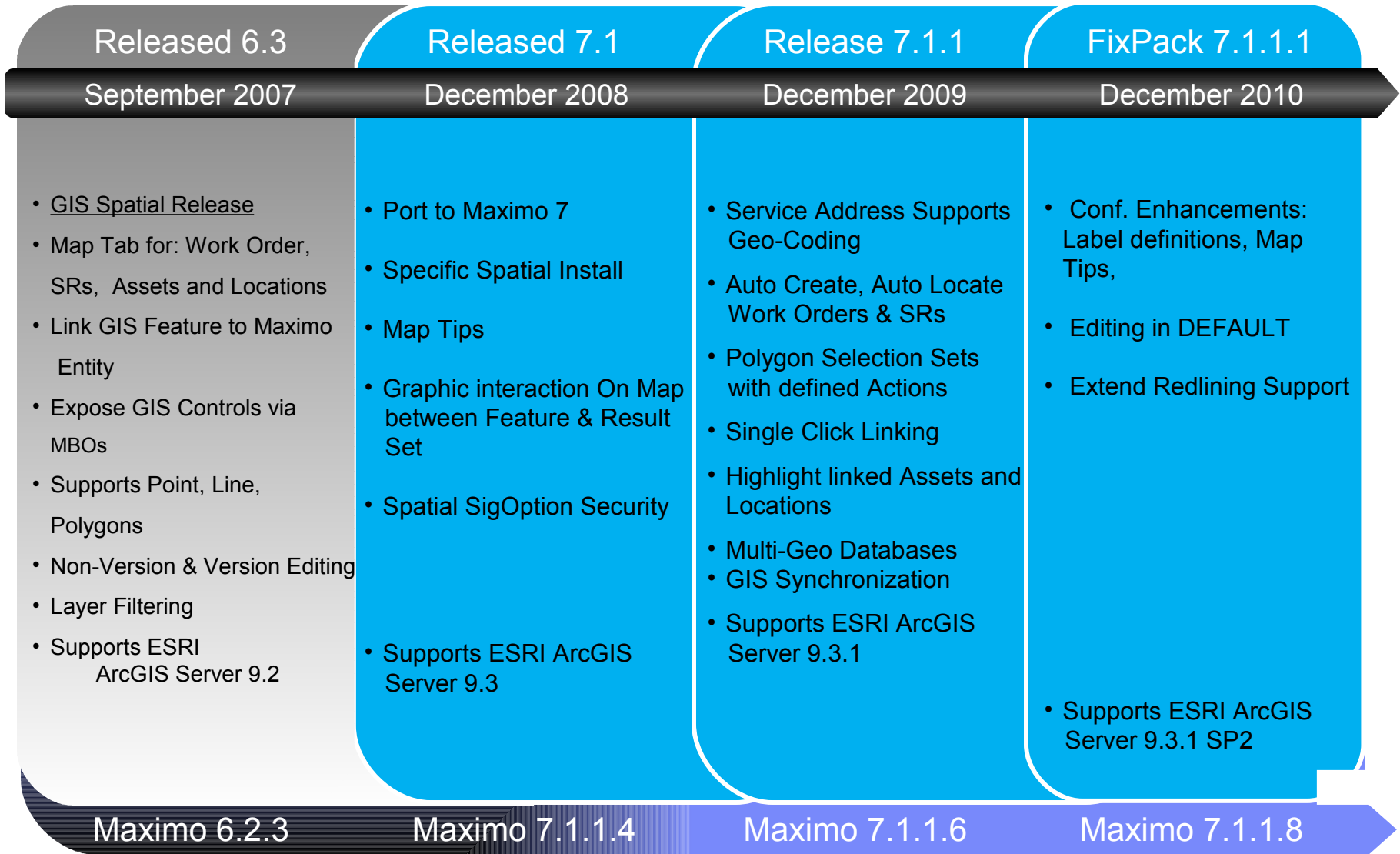
You can view assets in a geospatial context, so that you can easily and dynamically visualize the spatial relationships between your assets and the roads, buildings, pipelines, and other mapped features around them.

Maximo Spatial Asset Management

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Maximo Spatial Architecture

Client

Web Browser

DHTML

JavaScript / DoJo

Maximo Interface to REST API

Maximo Interface to Geodatabase

HTTP

Servlet

REST API
JS / DoJo

Published
Map, Data,
GP Services

Web Server

Web Server

J2EE Maximo

Maximo Objects

ArcObjects

ArcGIS Server

Application Server

Application Server

Maximo

Geodatabase

Maximo for Utilities & Spatial Asset Management Timeline

PGE
NT PWC
Alta Gas
Westpower/Electronet NZ
Oneok: Texas Gas, Kansas Gas, Oklahoma Gas
APS Arizona Public Service
Chelan PUD
MAVIR - Hungary
Bord Gais
Oncor
Nova Scotia Power
NV Energy
JEA Jacksonville Electric Authority
Duke Energy
Nisource
Vectren
DTE Energy
SRP Salt River Project
BG&E Baltimore Gas & Electric
CSU Colorado Springs
Lakeland Electric
LCRA
Lower Colorado River Authority

2003
2004
2005
2006
2007
2008
2009
2010
2011
2012

Palm Beach Co Water
Laclede Gas
MA DOT
Roseville
City of Austin
SE Water

Release 7.5.0.1
Esri 10.1

Boston
Brunei
Cape Fear
MSD St Louis
Goulburn-Murry Water (Aus))
Marafong City (SA)
Henderson
Waterloo (CA)
City of Chesapeake

Release 7.5
esri 10 SP4

Release 6 Util 7.1.2

JS REST API

Release 5 Utilities & Spatial 7.1.1
esri 9.3.1 SP2

Release 4 Utilities & Spatial 7.1 esri 9.3

Release 3 T&D 6.3 with Spatial and esri 9.2 SP3
Added SQL Server 6.3.2

Release 2 T&D 6
added DB2 6.2.1

Release 1 T&D 5.2

Maximo Utilities Advisory Council

Maximo Development Partners Engaged along with MUWG

For illustrative purposes – approximations made on time line

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Maximo Spatial Asset Management - Roadmap

Released 6.3	Released 7.1	Release 7.1.1	FixPack 7.1.1.1
September 2007	December 2008	December 2009	December 2010
• GIS Spatial Release • 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 • Supports ESRI ArcGIS Server 9.3	• 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 • Multi-Geo Databases • GIS Synchronization • Supports ESRI ArcGIS Server 9.3.1	• Conf. Enhancements: Label definitions, Map Tips, • Editing in DEFAULT • Extend Redlining Support • Supports ESRI ArcGIS Server 9.3.1 SP2
Maximo 6.2.3	Maximo 7.1.1.4	Maximo 7.1.1.6	Maximo 7.1.1.8

Maximo Spatial Asset Management

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Maximo Spatial Asset Management - Roadmap

Release 7.5	Fixpack 7.5.0.1	Scheduler 7.5.1	Release 7.Next
April 2011	July 2012	July 2012	TBD

Release 7.5 — April 2011

Support for EAM 7.5 and supporting products

Supports Maximo Spatial 7.5*

• 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

Fixpack 7.5.0.1 — July 2012

Accomodation Release Spatial
▪ 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

Scheduler 7.5.1 — July 2012

Add-on Product*

Maximo Scheduler Workforce Management Enhancements

Dispatching
Public Map UI Control
Mobile Everyplace Applications
Crew Management
Service Address

Graphical Assignment
Schedule Compliance
Assign other resources
Work Order Actions

* Sold as an Add-on to Maximo

Release 7.Next — TBD

Future Development Consideration:

▪ Full integration with new SI Maps component
▪ ESRI cloud services support (WebMaps)
▪ Maximo Linear, Network Tracing and Analysis
▪ Analytics – Support geoprocessing tools (input, analyze, output)
▪ Geometric Network Trace, Routing and Clustering
▪ Simplify configuration process and more extensibility
▪ Feature layers and clustering
▪ Enhanced map editing
▪ Data synchronization
▪ Vegetation Management with the use of Spatial

▪Interoperability (GE Smallworld, Intergraph...)

Maximo 7.5	Maximo 7.5.0.3	Maximo 7.5.0.3	

Spatial 7.5.0.1 Scope

Added support for ESRI ArcGIS 10.1. ArcGIS 10 is still supported.

ArcGIS 10 – Service packs 1 to 4. Service pack 5 is being certified

ArcGIS 10.1 – Service pack 1 is being certified

Moved to ESRI ArcGIS Javascript API version 2.8

Layer legends added to the "Map Contents" map widget

Identify tool performance improved. Now Identify tool does not retrieve the feature geometries if not needed.

Support for map scale bar. Can be configured in Spatial Map Manager application.

The default visibility of the map services can be configured inside Maximo in the Map Manager application.

Spatial 7.5.0.1 Scope

Layer Legend

IBM
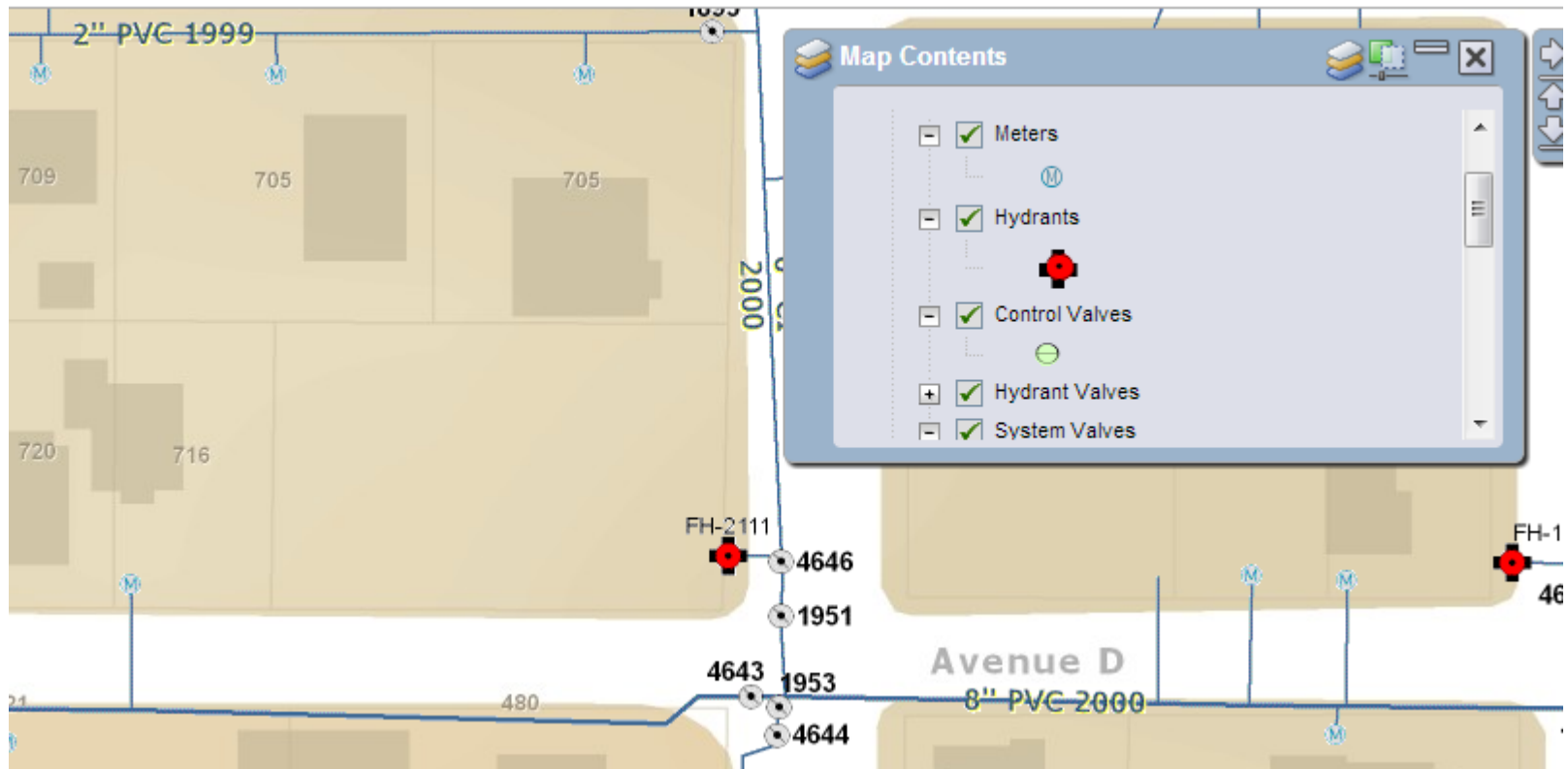
Spatial 7.5.0.1 Scope

Map scale bar
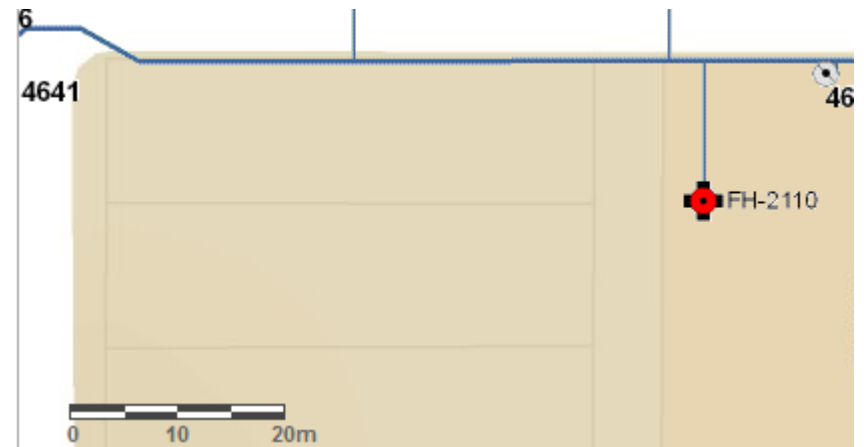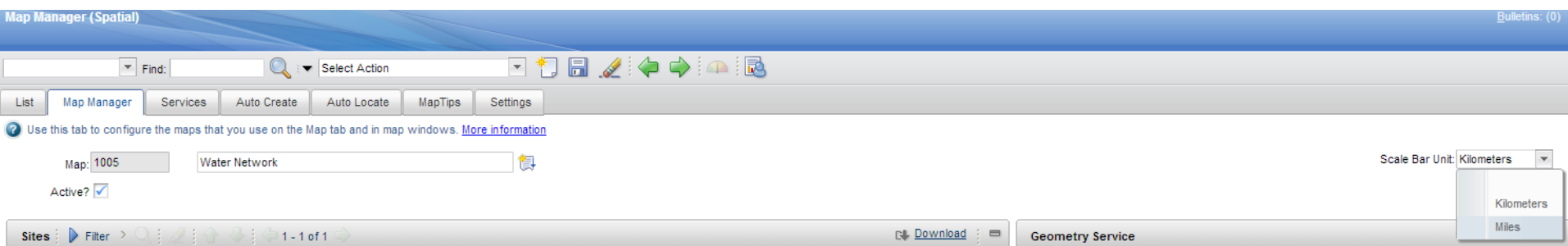
Spatial 7.5.0.1 Scope

Configure default map service visibility

Layer visibility can be configured in the MXD file

Details	
✱ Name:	Basemap
✱ URL:	http://sampleserver1.arcgisonline.com/ArcGIS/rest/services/WaterTemplate/LocalGovernmentInfrastru...
✱ Order:	200
✱ % Transparency:	0
Visible?	✓

Spatial 7.5.0.1 Scope

"Run Check Configuration" action now can be executed from Spatial Map Manager application

Spatial database configuration tool to bypass the use of Database Configuration application, so to simplify the object creation for multiple feature class tables.

http://ibm.co/TwurH9

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Spatial 7.5.0.1 Scope

Run Check Configuration
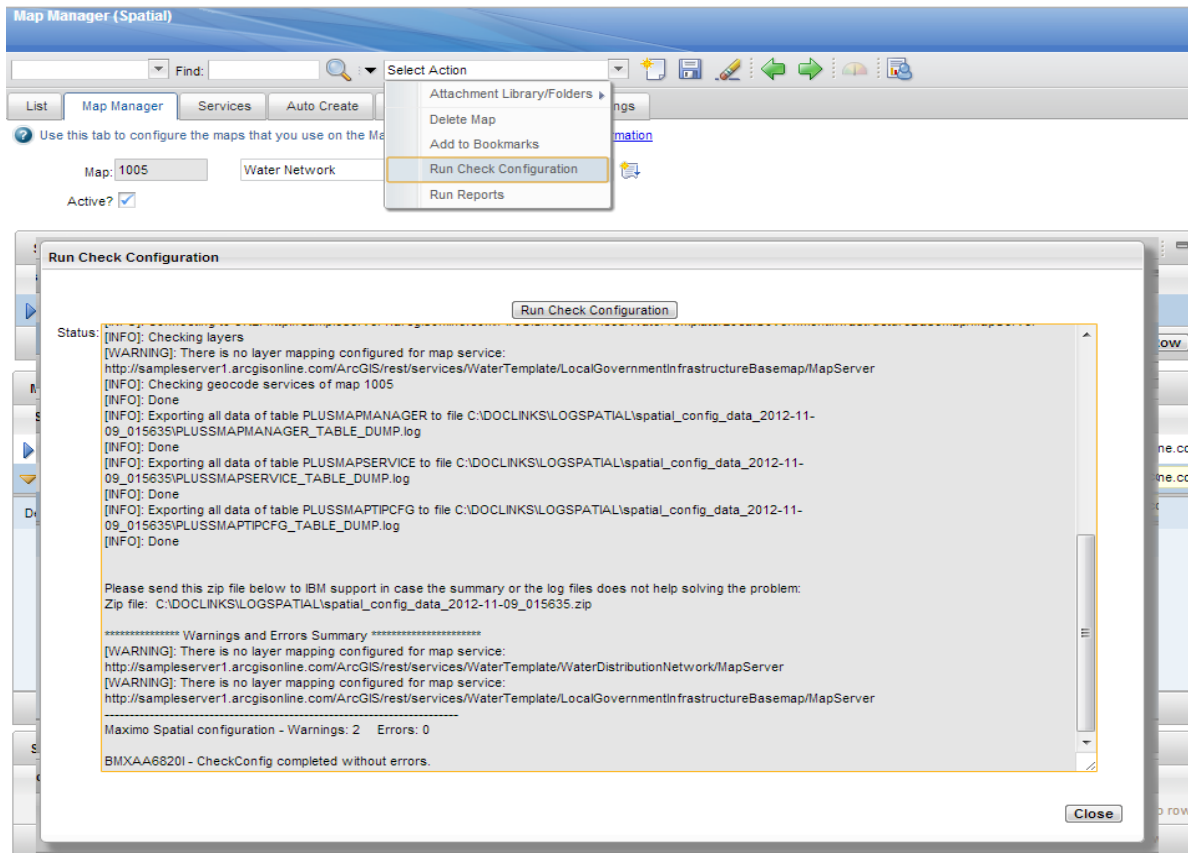
Spatial 7.5.0.1 Scope

Spatial database configuration

```
C:\spatial\tools\maximo\spatial>spatialconfig.bat
Spatial Config DB Tool
:
: If you want to cancel type Ctrl/C to close the tool.
:
: Otherwise,
Press ENTER to continue . . .

--- Starting mode ---
Fri Nov 09 02:16:55 BRST 2012BMXAA6806I - Reading the properties file maximo.properties.
BMXAA6818I - SpatialConfig started for schema MAXIMO, connected to database jdbc:oracle:thin:@localhost:1521:maximo Fri Nov 09 02:16:59 BRST 2012
--- Mode: ALL ---
```

Spatial 7.5.0.1 Scope

Migration to use the new Service Address functionality on TPAE 7.5.0.3.

All Service Address data is migrated automatically from the old Spatial Service Address tables to the new Service Address tables

All configuration related to Service Address is automatically migrated.
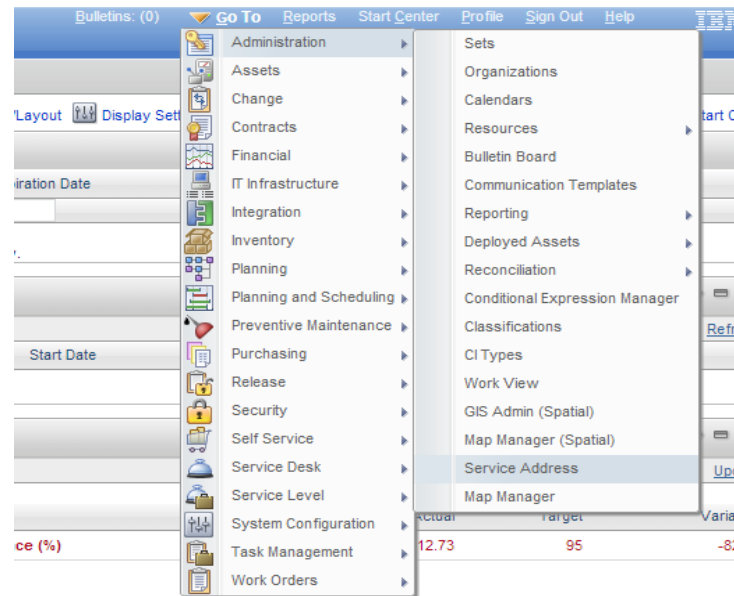
Spatial 7.5.0.1 Scope

Spatial cron task now works for service address records

Spatial cron task now supports feature records with just the one of the link attributes set.

Spatial cron task extension point method added
to psdi.pluss.app.plussgis.PlusSAssetLocFeatureLinkCronTask class.

This method is called for every record the cron task processes.

   Method signature: protected void updateRecord(MboRemote mxRecord, MboRemote
   gisRecord, Map<String, String> mapping) throws Exception

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Spatial 7.5.0.1 Scope

Fixed issues

11-14336 => When you try to save a record with new or updated map features, an error message is displayed in the log files.

11-16034 => The Spatial Check Configuration tool was created to identify configuration problems when installing Maximo Spatial and to integrate it to the existing GIS database.

11-13653 => Installing Spatial on Maximo 7.5 throw SQL Exception when running updatedb in SQL Server 2008 and DB2: Cannot insert duplicate key row in object 'dbo.crontaskparam' with unique index 'crontaskparam_ndx'.

11-13690 => When you search for an address and click highlighted graphics after selecting a polyline or a polygon, the map breaks before showing the maptips.

11-14133 => If a feature class is configured with a storage type that is different than the ones specified in the documentation, you cannot link or unlink map features with Maximo records.

11-14405 => When you try to print from the map tab using the Print icon, all map layers appear in the image, even if some of them are not supposed to be visible.

11-15392 => In the Work Order application, if you change the service address relationship to a feature class that does not include the siteid, the auto-create work order functionality does not work.

12-10461 => CLIENT EXTENSIONS TO MAXIMO FIELD CLASSES ARE OVERRIDEN WHEN SPATIAL PRODUCT IS INSTALLED

Spatial version matrix

Maximo Spatial version	Maximo Asset Management version
7.5.0.1	7.5.0.3
7.5.0.0	7.5.0.2 7.5.0.1 7.5.0.0
7.1.1.1	7.1.1.9 7.1.1.8 7.1.1.7 7.1.1.6
7.1.1.0	7.1.1.6
7.1.0.1	7.1.1.4
7.1.0.0	7.1.1.4
6.3.3	6.2.3

Useful links

Maximo Spatial wiki page

http://www.ibm.com/developerworks/wikis/display/maximo/Spatial+Asset+Management

Tivoli RFE Community

http://www.ibm.com/developerworks/rfe/?BRAND_ID=90

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Questions
&
Answers

IBM

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Thank you!

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Francisco De Pitta
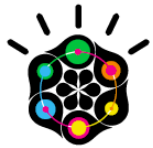Building B91 Fl 09 Of DM7
SÃO PAULO, Brazil

55-11-2927-1268
jmaior@br.ibm.com
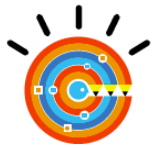
Education
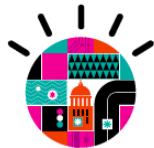
Government
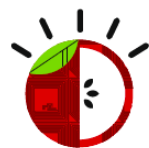
Food

Cloud Computing
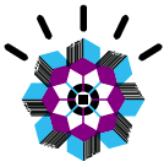

Cities

Oil

Energy
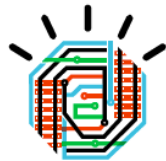

Public Safety

Telcom

Healthcare

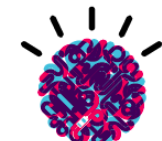
Products

Rail

Infrastructure

Intelligence

Work

Buildings

Banking

Retail

Water

Traffic

Let's build a smarter planet.

Maximo Spatial Asset Management

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