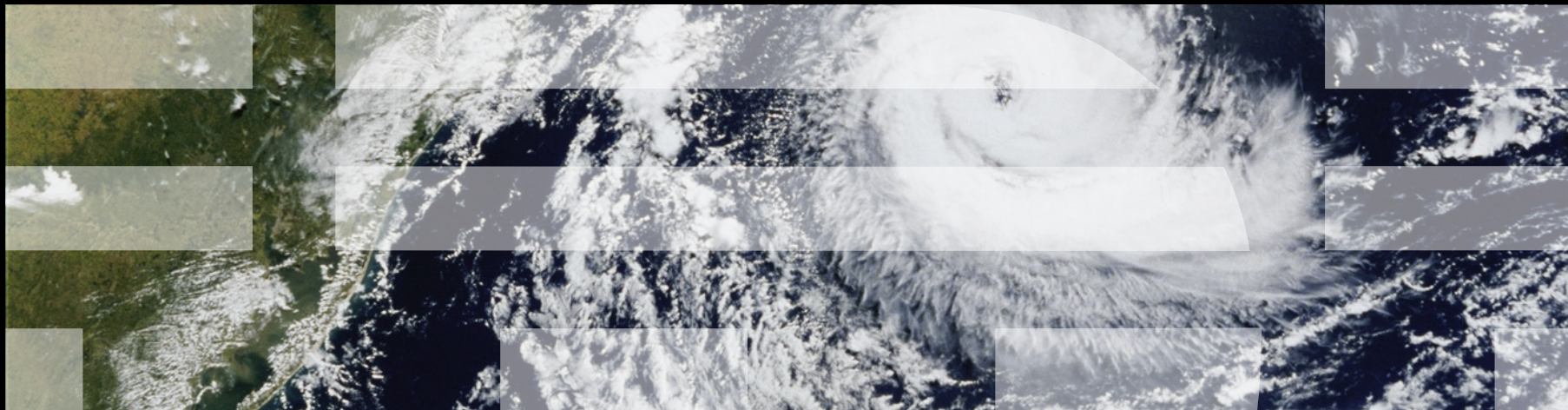


Nithiya Parameswaran, Product Architect
Brian Downey, Product Architect
Lisa Stuckless, Product Architect
Dave Calvert, Product Manager



AVKS Maximo Scheduler Enhancement Plan & Road Map

February 2012



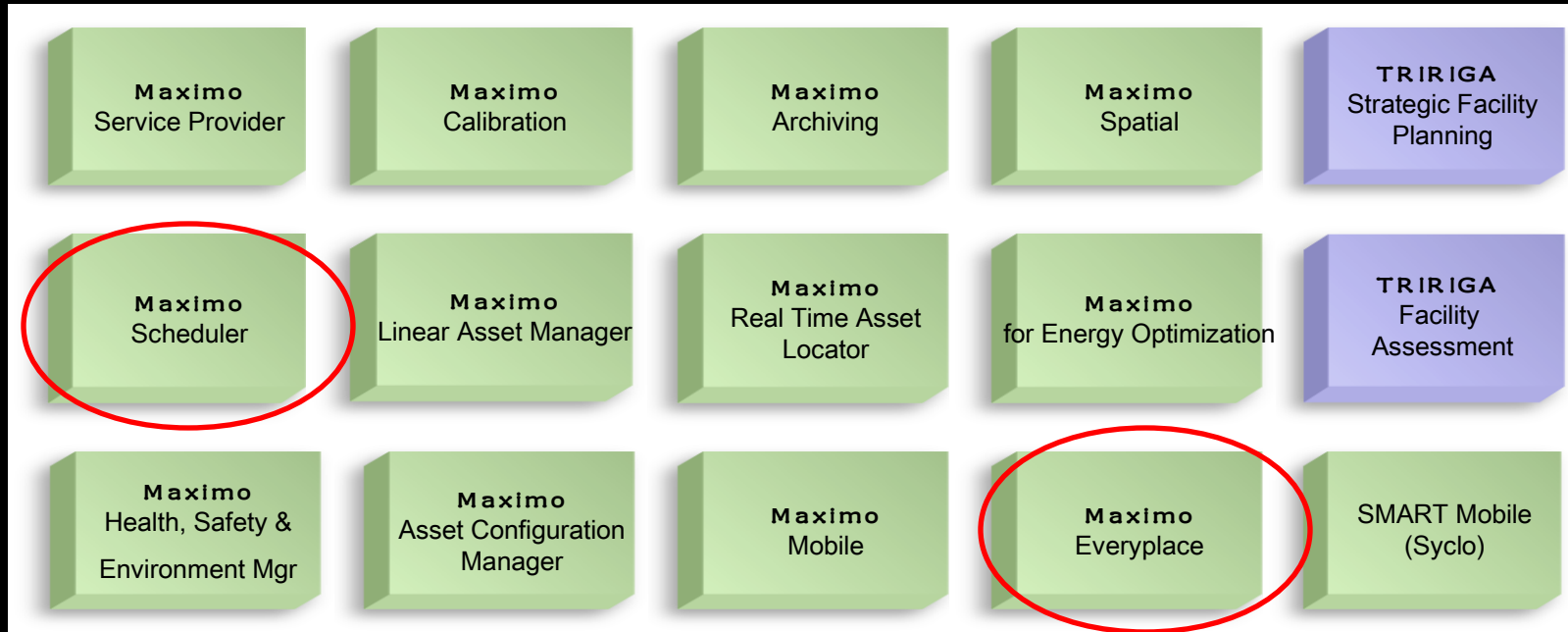
Disclaimer

The information on new products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information on new products is for informational purposes only and may not be incorporated into any contract. The information on new products 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 and TRIRIGA Solutions

Add-on Solutions

Additional options, used with core or industry solutions, provide deeper functionality for specific needs.



Integration Adapters

Commercially-supported integration to other enterprise and 3rd party systems.



The Cold Hard Truth

Maximo used to handle the demands of work management with a number of internal tools that accommodated complex work requirements, but required adaptors for true planning and scheduling.

- Microsoft Project Adaptor
- Primavera Adaptor

We have charted a path to eliminate the need for adaptors and place full work management control and visibility into the hands of the Planners & Schedulers leveraging our existing products:

- Maximo
- Maximo Scheduler
- Maximo Everyplace

The Forces Behind our Strategy

- Industry driving forces are changing the way in which companies compete, maintain, and offer services to customers
- The demand for improved service levels (internal/external) and an increased focus on schedule and resource optimization
- Empowering the field technician
- Natural fit with Maximo's Industry Solutions

- **Why Now?**
 - Deregulation
 - Globalization
 - Rising customer expectations
 - Decreasing operational budgets
 - Reduced workforces
 - Technological changes
 - Do more with less - to increase customer satisfaction while reducing operating costs.

- **Who is telling us**
 - Development Partners
 - Beta customers
 - Scheduler users



The Work Management Plan Forward

Objective: Invest in the natural evolution of our current products in a direction desired by our customers

Functionality Within Scheduler

- Graphical Assignment
- Dispatching
- Provision of standard Work Order actions
- Additional Resources
 - Assets/Locations
 - Labor
 - Tools
 - Materials
- Schedule Compliance
- Optimization (iLOG Optimization tools)

Functionality Within Maximo

- Service Addresses
- Public Map UI Control
- Crews

Additional Maximo Everyplace role based templates

Focus Areas Moving Forward

Capacity Planning

Forecast Work
Identify Resource Gaps

Res. Optimization

Asset Availability
Location Availability
Material & Tools Avail.
Labor/Crew Avail.
Resource Leveling

Assignment

Graphical UI

Automated
Labor & Crew

Dispatching

Map Control
Route Optimiz.

Automated
Labor & Crew

Real Time Comm.

Assign Emergency Work
Communicate to the Crew/Resource

Schedule Compliance

Roles considered within the use cases

Scheduler/Planner



- Defines and adjusts labor/crew availability along with resource leveling
- Capacity Planning
- Assigns work orders to resources
- Continuously optimizes the schedule as the operational environment changes
- Sequence and route work assignments based on geography

Dispatcher



- Monitor field resources and work order progress and status
- Monitor the location of field resources compared to open orders
- Enter status and complete work orders on behalf of technicians who don't have mobile devices
- Sequence and route ongoing work assignments based on geography and optimization

Field Technician

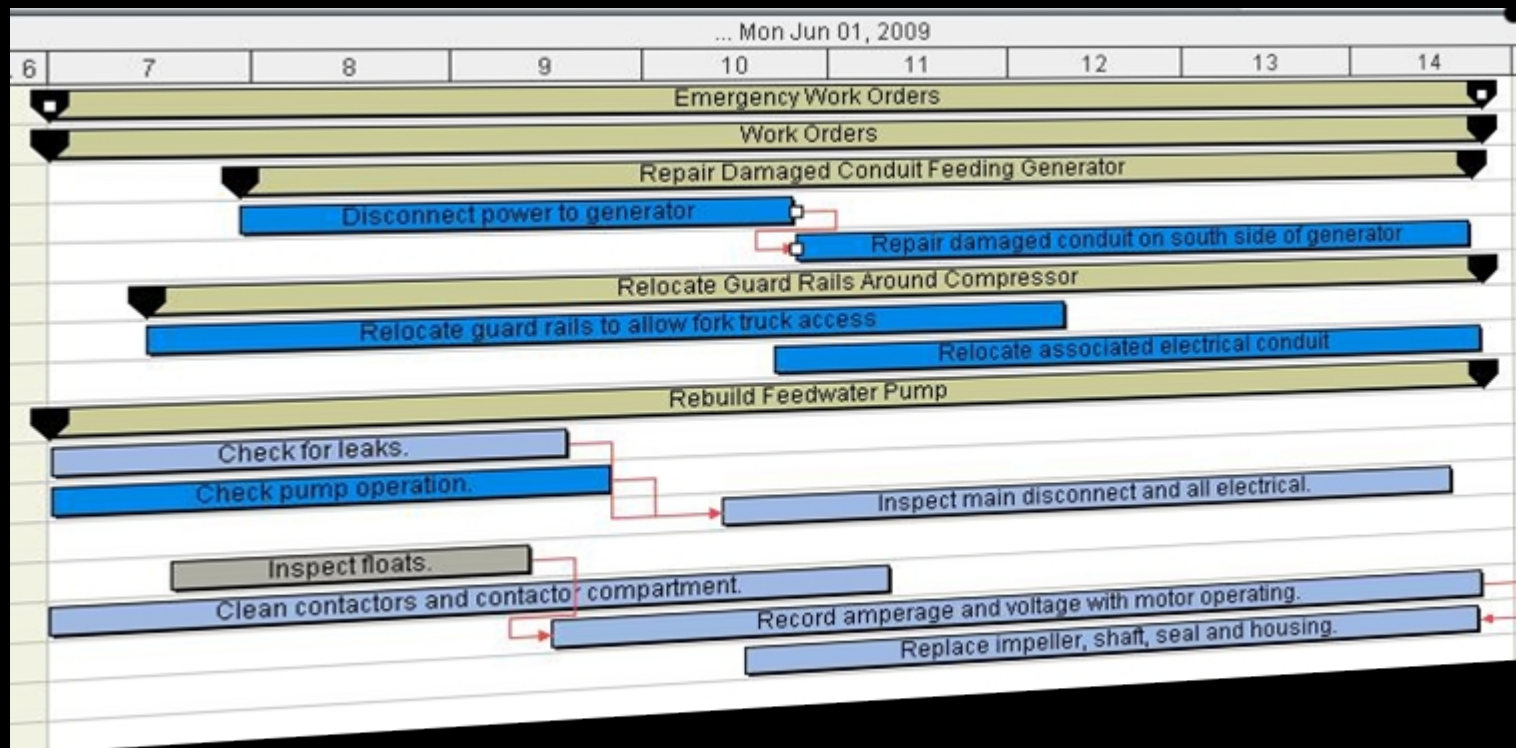


- Supervisor approves and assigns work on mobile devices
- Receive work orders in the field and provide real time status updates to dispatch
- Complete, edit and approve work orders on mobile devices along with viewing work on a map with optimal driving directions
- Notify dispatch of potentially dangerous situations, incomplete work

Scheduler Work Management Components

What is Maximo Asset Management Scheduler?

A Maximo application that contains a Gantt tool to schedule work orders, tasks and PM forecasts graphically



Scheduler so far...

Scheduler 7.1

Gantt View to visualize work orders and tasks

- Drag & drop work orders & tasks
- Manage dependencies
- Perform CPM
- View resource load and availability

Work Orders

- Date constraints
- Task dependencies

Scheduler 7.1.1

Gantt View to visualize PM forecasts

- View and manage future PMs and Work Orders
- View resource load and availability for both future PMs and Work Orders

Work Orders

- Bulk Reschedule
- Assignment Manager tab in Work Order application

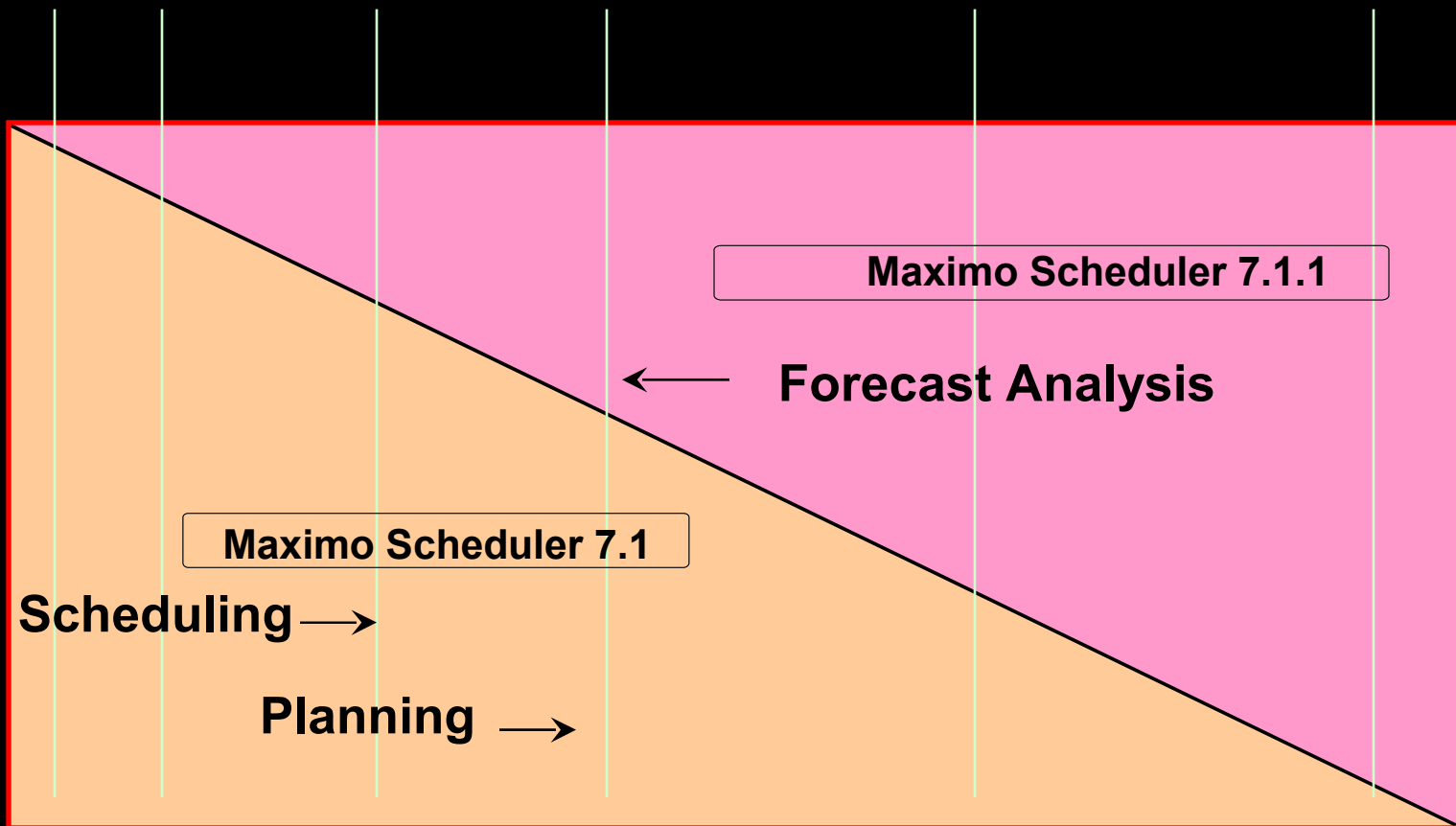
3Q,2009

1Q,2010

Planning Horizon



detail



time

Show Other Resources

- Following additional resources will also be shown in the Gantt
 - Assets
 - Show maintenance window when Asset is available
 - Locations
 - Show maintenance window when Location is available
 - Tools (both rotating and non rotating)
 - Show required vs available, similar to crafts
 - Materials
 - Indicate in green reserved items that are in stock
 - Show required vs available for non reserved items

Change Status and Other Options

- Provide the ability to change the status of the work order / task from Scheduler
 - Can select multiple work orders and change the status
 - Action available as a tool bar button

- Create follow up work order

- Create Job Plan

- Start Workflow

Work Order Actions

Print Activity Chart
 Print Resource Chart

Work	Task	Description	Start Date	End
		MYSCHEM My Work Orders	2/11/11 6:0...	2/11/11
		Work Orders	2/11/11 6:0...	2/11/11
122	10	...	2/11/11 7:0...	2/11/11
122	20	...	2/11/11 7:5...	2/11/11
122	30	...	2/11/11 9:0...	2/11/11
122	40	Disable VPN account	2/11/11 9:0...	2/11/11
141		Upgrade Order Processor #1	2/11/11 7:0...	2/11/11
141	10	Replace transmission		
142	10	Replace transmission		
142	20	Test electrical system,		
142	30	Replace battery and clean connectin...	2/11/11 11:...	2/11/11
142	40	Replace wheel bearings, grease ste...	2/11/11 11:...	2/11/11
142	50	Test - operate vehicle, check safety p...	2/11/11 1:3...	2/11/11
143		Overhaul Ford Electrical Cart	2/11/11 8:2...	2/11/11
143	10	Replace transmission belts, lubricat...	2/11/11 8:2...	2/11/11
143	20	Test electrical system, replace exter...	2/11/11 8:2...	2/11/11

New Work Order Actions

- Change Status
- Assign to New Parent
- Select Owner
- Modify Work Details
- Initiate Workflow
- Go To Quick Reporting
- Go To Work Order Tracking

Connect anti-static dev...
 Install upgrade RAM, re...
 Install upgrade hard dr...
 Install upgrade OS and...
 Attach back cover and r...
 Run machine through u...
 Overhaul GM Electrical Ca...

Work: 1141
 Task:
 Description: Upgrade Order Processor #1
 Start Date: 2/11/11 7:00 AM
 End Date: 2/11/11 9:01 AM
 Priority: 3
 Status: WAPPR
 Asset:
 Location: SHIPPING
 Interruptible: N
 Resources:

source	Description
My Work Orders	
Crafts	
Electrician	

Resource Leveling & Optimization

- Support various optimization models

- Input

- Flexible resource combinations
 - Priorities: Asset, Work , Location, Material, Tools
 - Resource availability
 - Appointment request

- Output

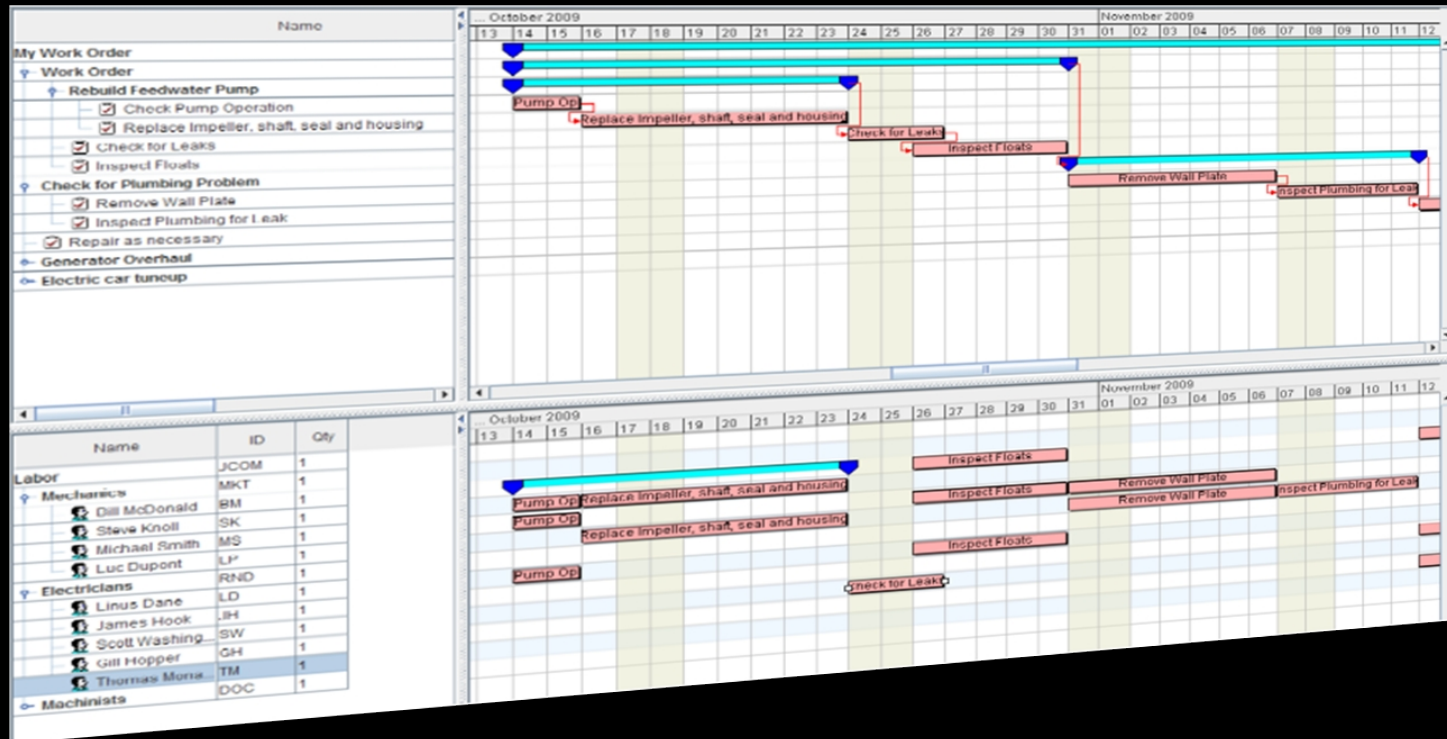
- Optimal work schedule based on resource availability, time constraint and other user defined objectives such as minimize cost, schedule emergency work first, etc.

Schedule Compliance

- How is my Schedule performing?
 - Quickly identify Work orders that are running late
 - In progress and scheduled but not started
 - Identify the cascading effect of delayed work orders
 - Reschedule pending work orders by CPM or via manual edits

Scheduler Graphical Assignment

Assignments



My Work Order

- Work Order
 - Rebuild Feedwater Pump
 - Check Pump Operation
 - Replace Impeller, shaft, seal and housing
 - Check for Leaks
 - Inspect Floats
 - Check for Plumbing Problem
 - Remove Wall Plate
 - Inspect Plumbing for Leak
 - Repair as necessary
 - Generator Overhaul
 - Electric car tuneup

Labor

Name	ID	Qty
JCOM	JCOM	1
Mechanics	MKT	1
Bill McDonald	BM	1
Steve Knoll	SK	1
Michael Smith	MS	1
Luc Dupont	LP	1
Electricians	RND	1
Linus Dane	LD	1
James Hook	JH	1
Scott Washing	SW	1
Gill Hopper	GH	1
Thomas Moris	TM	1
Machinists	DOC	1

- A new graphical UI to assign people to work orders and tasks
- Drag and drop capability
- Supports both Automatic and Manual Assignment
- Ability to view a person's existing assignments, vacation, work breaks etc.
- Ability to split assignments and reallocate to different people

Graphical Assignment

Graphical Assignment

Bulletins: (1) Go To Re

Find: Select Action

List Work List Gantt View

Description Filter Sort by the Default V... Show All Print Activity Chart Print Resource Chart

Work	Task	Description	Start Date
1142		Assignment	2/11/11 7:0... 2/11
1142		Overhaul GM Electrical Cart	2/11/11 8:1... 2/11
1142	10	Replace transmission belts, lubri...	2/11/11 8:1... 2/11
1142	20	Test electrical system, replace e...	2/11/11 9:3... 2/11
1142	30	Replace battery and clean conne...	2/11/11 11... 2/11
1142	40	Replace wheel bearings, grease ...	2/11/11 11... 2/11
1142	50	Test - operate vehicle, check saf...	2/11/11 12... 2/11
1143		Ford Electrical Cart Overhaul	2/11/11 8:1... 2/11
1143	10	Replace transmission belts, lubri...	2/11/11 8:2... 2/11
1143	20	Test electrical system, replace e...	2/11/11 8:2... 2/11

Assignment Node

Drag & drop assignment to available resource

Resource	Description
BALL	Allan E
GORMLEY	Jim Gorr
HORN	Christine H
LIBERI	Diane Lit
PEDRICK	Mike Ped
SMITH	Roland Sn
WILSON	Mike Wils
MECH	Mechanic
BARRY	Thomas B:
KELLY	Howard K
KLIEN	Ted Kl
LEWIS	Bill Lewis
REVIS	Tom Revis
STANLEY	Fred Stanley
STORM	Katherine Str

Dispatching With Maximo Scheduler

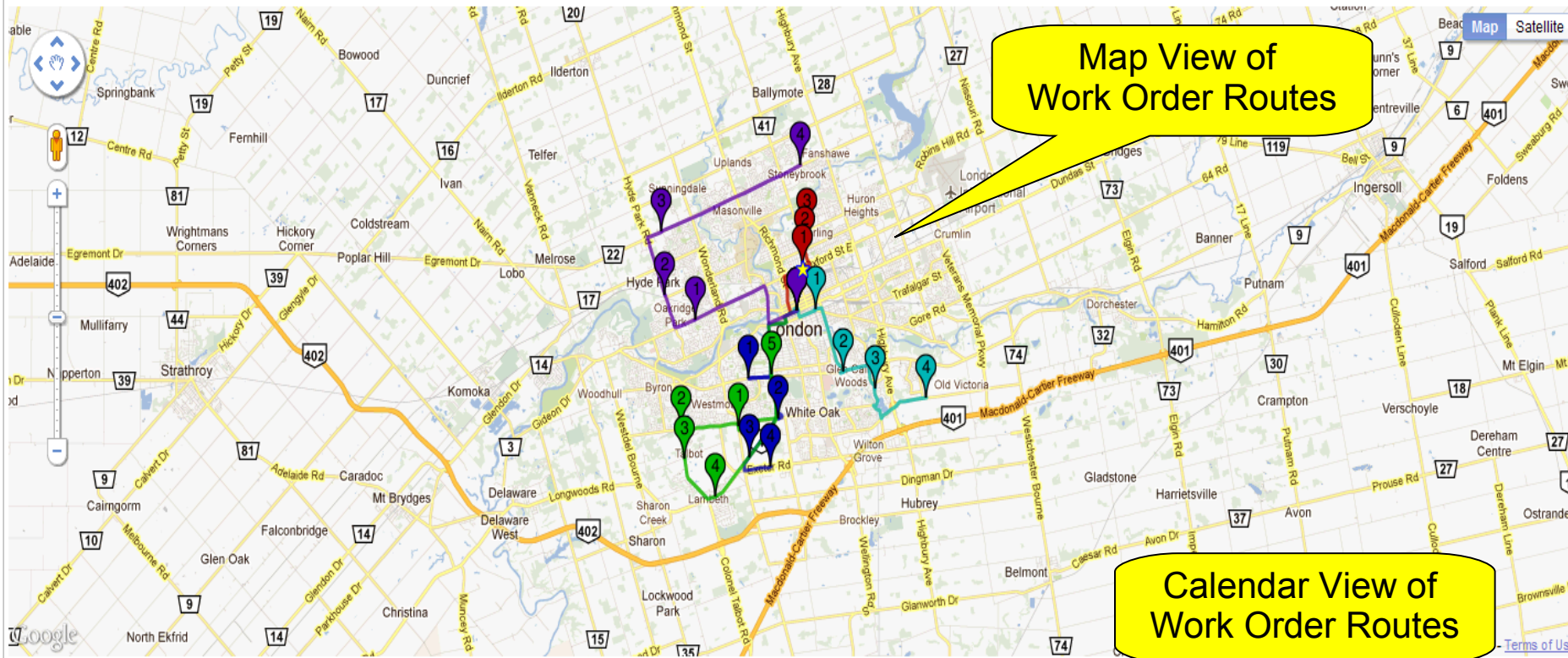
Dispatching Application

New Dispatching application will be created

- Quickly identify where resources and crews are located on maps
 - Current crew or resource assignments
 - Prioritized route
- View overall assignments and routes
 - Provision of directions where required
- View daily schedule of each resource
 - Include scheduled downtime, overtime

Dispatching Application

Route Map



Calendar View of Work Order Routes

Timeline

<input checked="" type="checkbox"/> Route	Start Location	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
<input checked="" type="checkbox"/> WILSON ROUTE	250YORK													
<input checked="" type="checkbox"/> HUNTER ROUTE	250YORK													
<input checked="" type="checkbox"/> FORD ROUTE	250YORK													
<input checked="" type="checkbox"/> LIBERI ROUTE	250YORK													
<input checked="" type="checkbox"/> HENRY ROUTE	250YORK													

From the Technicians Perspective

Revise the Technicians View

Create new mobile applications for the field technician

- Leverage existing Maximo Everyplace product
 - Ability to tailor the application with Application Designer tool
- New templates will be created for the field technician
 - View current and sequenced assignments for themselves or their crew
 - Obtain directions where required
- View and feedback on work order details
 - Tailorable content
- Dynamic updates of sequenced work reflecting newer higher priority work, reassignments, emergencies

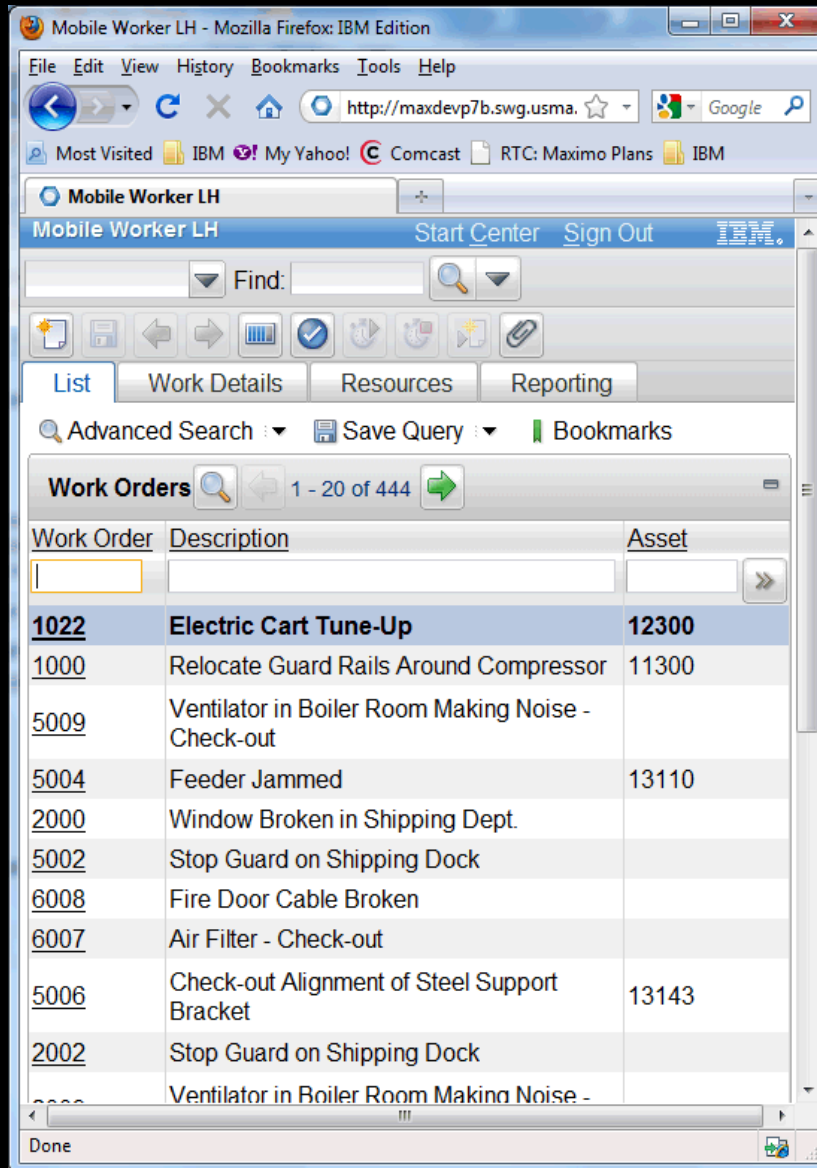
Field Technician Application



Route Details 1 - 3 of 3

Work Order	Location	Scheduled Start	Scheduled Finish	Hours
1195	500OXFORD	10/27/11 8:30 AM	10/27/11 9:30 AM	1:00
1167	999ADL	10/27/11 10:30 AM	10/27/11 11:30 AM	1:00
1169	700HURON	10/27/11 12:30 PM	10/27/11 1:45 PM	1:15

Field Technician Application



Mobile Worker LH - Mozilla Firefox: IBM Edition

File Edit View History Bookmarks Tools Help

http://maxdevp7b.swg.usma

Most Visited IBM My Yahoo! Comcast RTC: Maximo Plans IBM

Mobile Worker LH Start Center Sign Out IBM

Find: []

List Work Details Resources Reporting

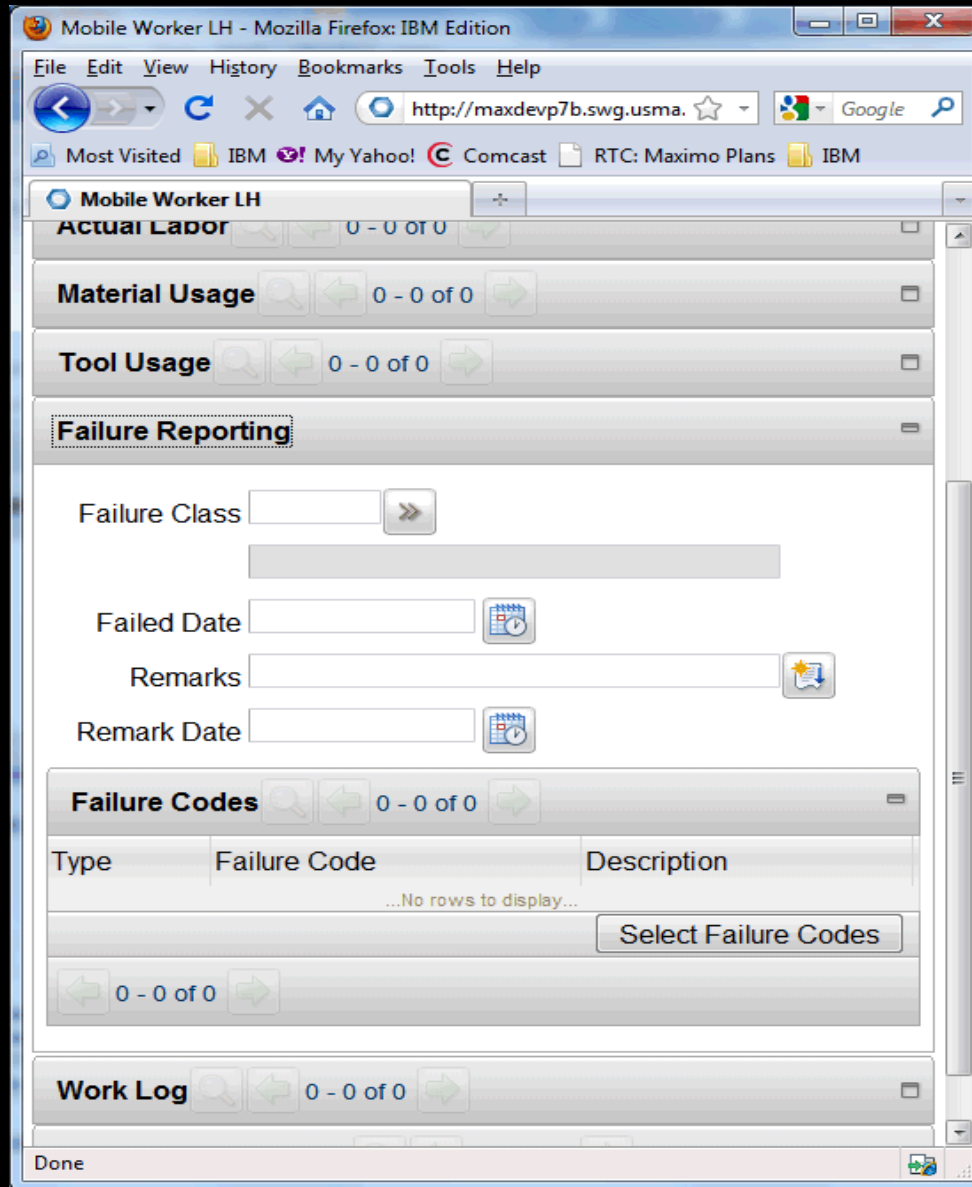
Advanced Search Save Query Bookmarks

Work Orders 1 - 20 of 444

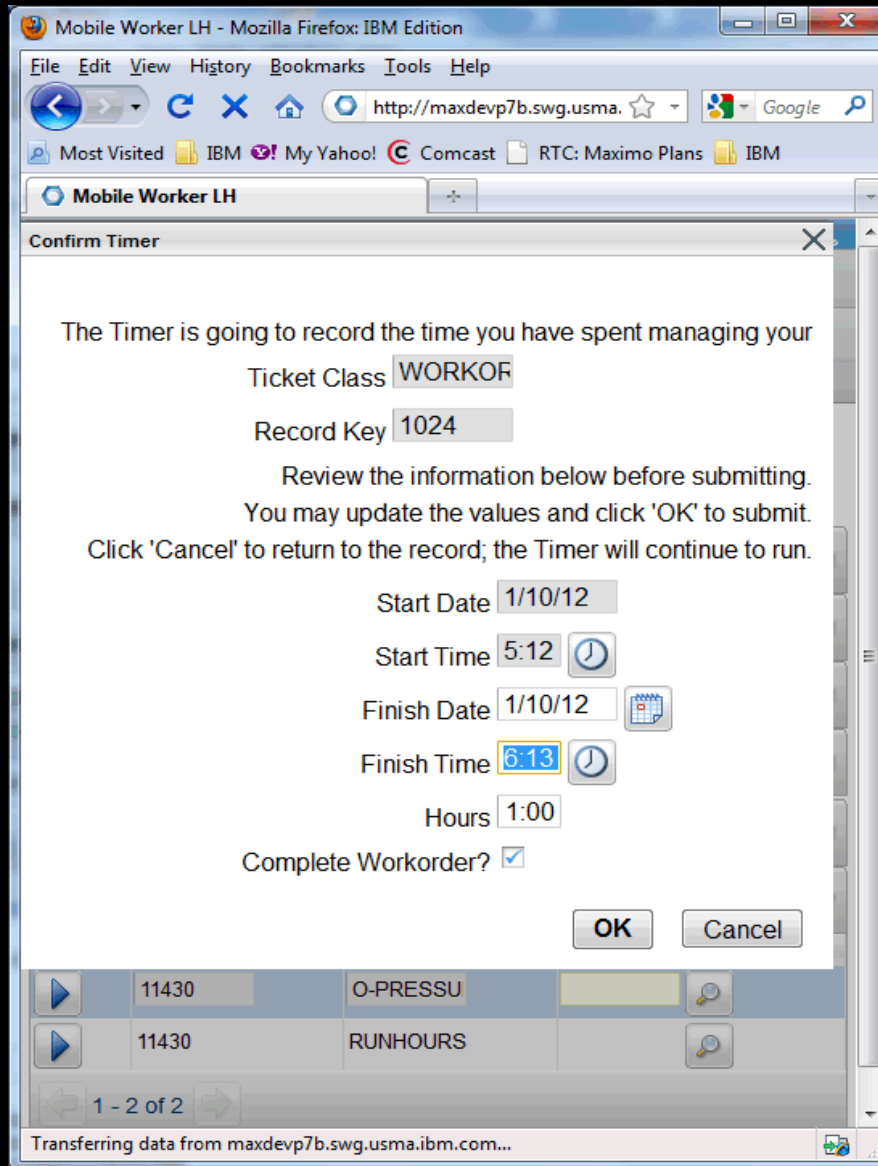
Work Order	Description	Asset
<input type="text"/>		
1022	Electric Cart Tune-Up	12300
1000	Relocate Guard Rails Around Compressor	11300
5009	Ventilator in Boiler Room Making Noise - Check-out	
5004	Feeder Jammed	13110
2000	Window Broken in Shipping Dept.	
5002	Stop Guard on Shipping Dock	
6008	Fire Door Cable Broken	
6007	Air Filter - Check-out	
5006	Check-out Alignment of Steel Support Bracket	13143
2002	Stop Guard on Shipping Dock	
5009	Ventilator in Boiler Room Making Noise -	

Done

Field Technician Application



Field Technician Application



Field Technician Application

Mobile Worker LH - Mozilla Firefox: IBM Edition

File Edit View History Bookmarks Tools Help

http://maxdevp7b.swg.usma

Most Visited IBM My Yahoo! Comcast RTC: Maximo Plans IBM

Mobile Worker LH Start Center Sign

Find:

List Work Details Resources Reporting

Work Order 1024

Condensate Return Pump Quarterly Servic

Planned Materials 1 - 3 of 3

Task	Item	Description
40	11453	Seal, Mechanical, Self Aligning- 1 In ID
50	11241	Contactora, Renewal Kit
60	XMP-9500	Gasket- AR46

1 - 3 of 3

Planned Tools 0 - 0 of 0

Task	Tool	Description
...No rows to display...		

0 - 0 of 0

Done

Demo

The Summarized Work Management Vision

- Use Maximo Scheduler to:
 - Find the optimal time to schedule upcoming work by balancing:
 - Work order and Task relationships and constraints
 - Labor, Asset, Location, Craft, and Material availability
 - Drag and drop labor assignments (or automate)

- Increase the visibility of resources and crews by:
 - Leverage map UI control for dispatching of incoming work
 - Monitor progress of existing work
 - Manipulate crew and resource routes

- Improve efficiency of field technicians
 - Leveraging map UI control for viewing of route stops
 - Dynamic work list based on dispatched work and automated optimization
 - Communication with neighboring resources
 - Intuitive feedback from mobile applications

For more information contact:
Dave Calvert – dcalvert@ca.ibm.com

Questions

