

# Maximo: Reinforcing Safety

Victoria and Tasmania User Group  
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# Agenda



1. Safety Moment
2. Why health and safety in Maximo?
3. Product overview
4. Selected HSE capabilities
5. Questions



# Safety Moment

Summer is almost here, time to get some jobs done!

If you are working at home on a ladder remember to work safely:

- Pre-check the condition of your ladder
- Don't overreach (I failed on this one recently)
- Don't overload yourself
- Use the right angle (1 in 4 rule)
- Maintain three points of contact when climbing
- Don't try to move the ladder while standing on the rungs



# The Challenge!



Health and Safety applications are often implemented as standalone systems which can inhibit cross organization communication and be a barrier to improved operational performance.



# “Structural secrecy”

The concealment of information by the structural features of organizations – Consequence is critical information may not cross organizational boundaries and mechanisms for constructive interaction are lacking

The Challenger Launch Decision: Rising Technology, Culture and Deviance at NASA. Diane Vaughan 1996

# Why HSE in Maximo?



- Many HSE related applications share the same asset and location structures as work management applications
- HSE and work management processes are often highly integrated whereas the applications that support them remain siloed. For example:
  - Permit to Work
  - Management of Change
- Existing Maximo infrastructure and administration capability can be leveraged for HSE applications
  - Servers
  - System administration
  - Training

# Definitions



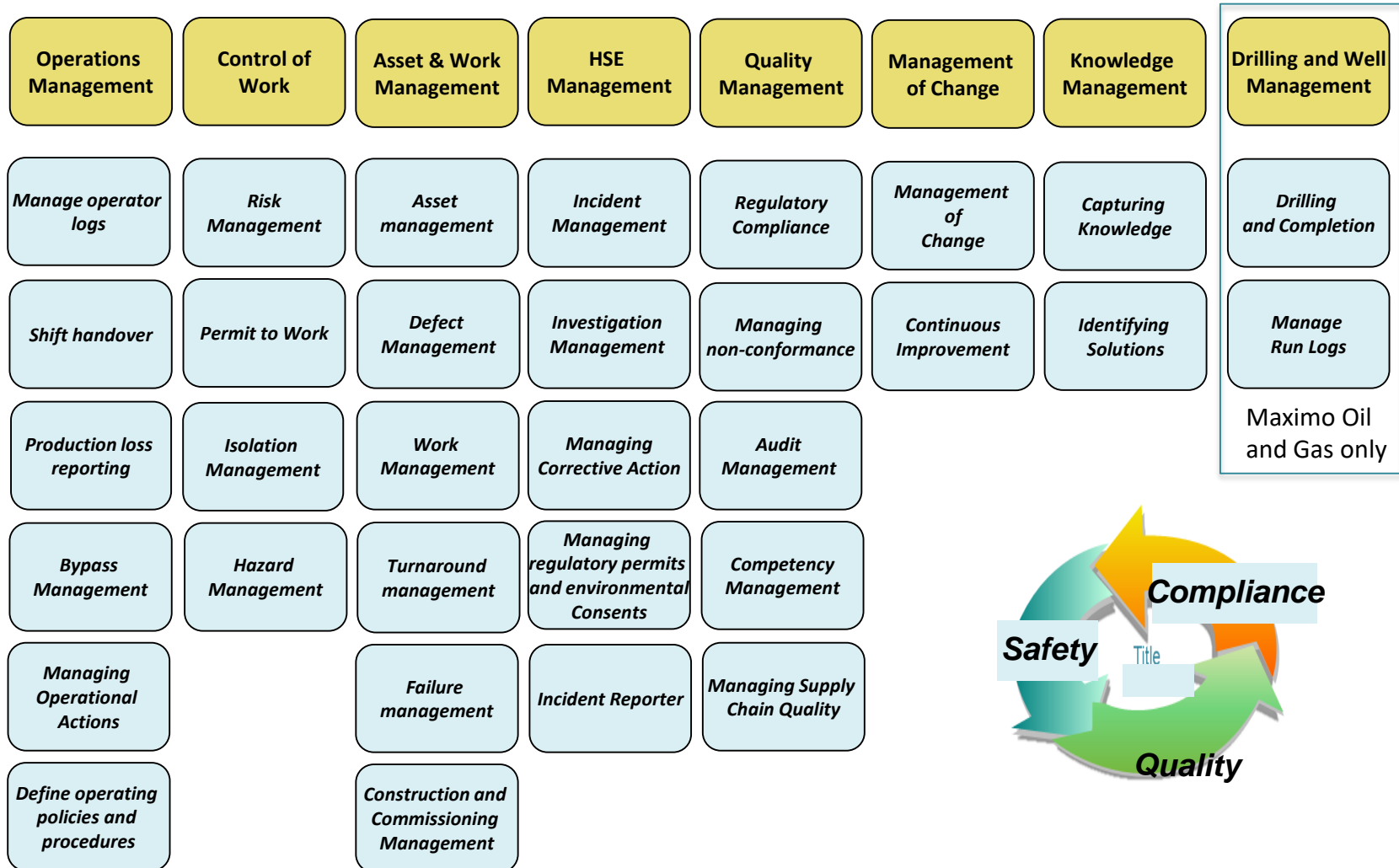
1. Process safety covers the management of major accident hazard risks such as loss or containment or chemical release to which organizations involved in managing major hazards may be exposed. Also sometimes referred to as asset integrity.
2. Occupational Health and Safety covers the management of personal safety in the workplace. There are two main components to this
  - Occupational injury resulting from a work related activity
  - Occupational illness caused by factors associated with employment

# Maximo Oil and Gas/HSE Business Processes



## Major Business Processes

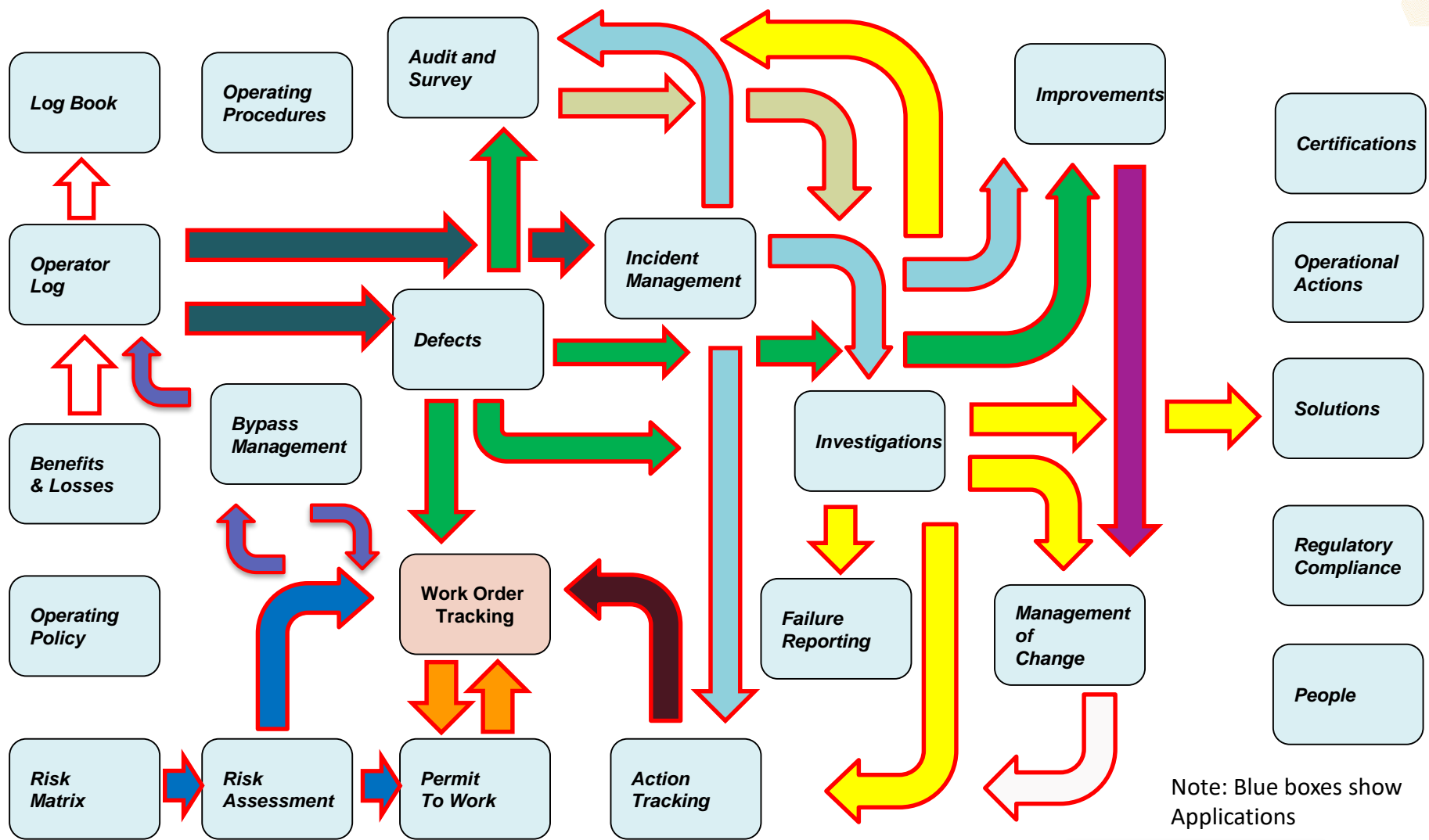
### Detailed Business Processes







# Examples of some of the possible interactions in Maximo Oil and Gas and HSE Manager



# Defects



Defect – A shortcoming or imperfection. Something that is not working to 100% of it's design performance

The screenshot shows the 'Defects (Oil)' application interface. The main section is titled 'Defect Details' and contains a 'Summary' field with the text 'Outlet pressure sensor defect'. Below this is a 'Details' section with a rich text editor containing the text: 'Outlet pressure sensor has been repeatedly failing over the last year. This has been causing loss of steam pressure with subsequent production losses. Audit identified this as a defect that needs to be eliminated.' To the right of the details section is a sidebar with fields for 'Defect Source' (DESIGN), 'Defect Type' (OPERATIONS), 'Defect Reference', 'Site' (BEDFORD), 'Internal Priority', 'Investigation Required?' (checkbox), 'Solution Identified?' (checkbox), 'Defect Eliminated?' (checkbox), 'SLA Applied?' (checkbox), and 'Create WO Options' (MULTI). At the bottom, there is a table titled 'Multiple Assets, Locations and CIs' with columns for Asset, Location, Configuration Item, Sequence, Mark Progress?, and Site. The table is currently empty, displaying 'There are no rows to display.'

Example use cases:

## 1. Defects

### 1. Operational

### 2. Maintenance

## 2. Non conformances

### 1. Quality

### 2. Structural defects

### 3. Inspection

# Improvements



1. Supports most types of continuous improvement methodology
2. Defect elimination
3. Cost/Benefit Analysis
4. Ideas management
5. First stage of a management of change process

Improvement

View Improvement Plans Related Records Actuals Project Details Log Service Address Map

ement: Outlet pressure sensor defect

Originating Record: 1199 Status: WAPPR

Originating Record Class: DEFECT Site: BEDFORD

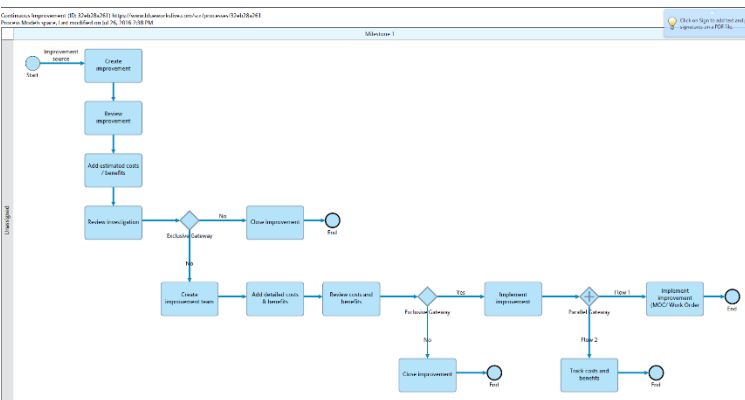
ails

n Leader: MIER Project Type: DEFECT Project Phase: ANALYZE

e: Kazmier Analysis Method: FMECA Critical To Quality? ☐

te: 593-2241

ail: kazmier@mro.com



ion

Defects and Measurements

Item Statement:  
Pressure sensor has been the source of  
related production losses

ion Statement:  
Minimize the production loss.

Measurement Required?  
☒

Measurement Type:  
MANUAL

KPI:  
KPI: >>

Meter:  
Meter: >>

Measurement Point:  
Measurement Point: >>

Target Defect Rate:  
Target Defect Rate: >>

**Certifications (Oil)**

Find Certification

[List View](#) | 
 [Certification](#) | 
 [Review Actions](#) | 
 [Readings](#) | 
 [Checklist](#) | 
 [Specification](#) | 
 [Regulatory Permit](#) | 
 [Review and Approval](#) | 
 [Related Records](#) | 
 Log Out

Header:

## WELD TEST CERTIFICATE

* Certification: 1014	Organization: <input type="text"/>	Site: <input type="text"/>	Attachments 
Extension: 0	Owner: <input type="text"/>	Owner Group: MAINT	Template? <input type="checkbox"/>
Category: OPERATIONS	Status: DRAFT	Status Date: 2/7/17 4:00 PM	External Status: <input type="text"/>
Permit and Certificate Type: WELDTTEST Weld Test Certificate	Regulatory Permit? <input type="checkbox"/>		

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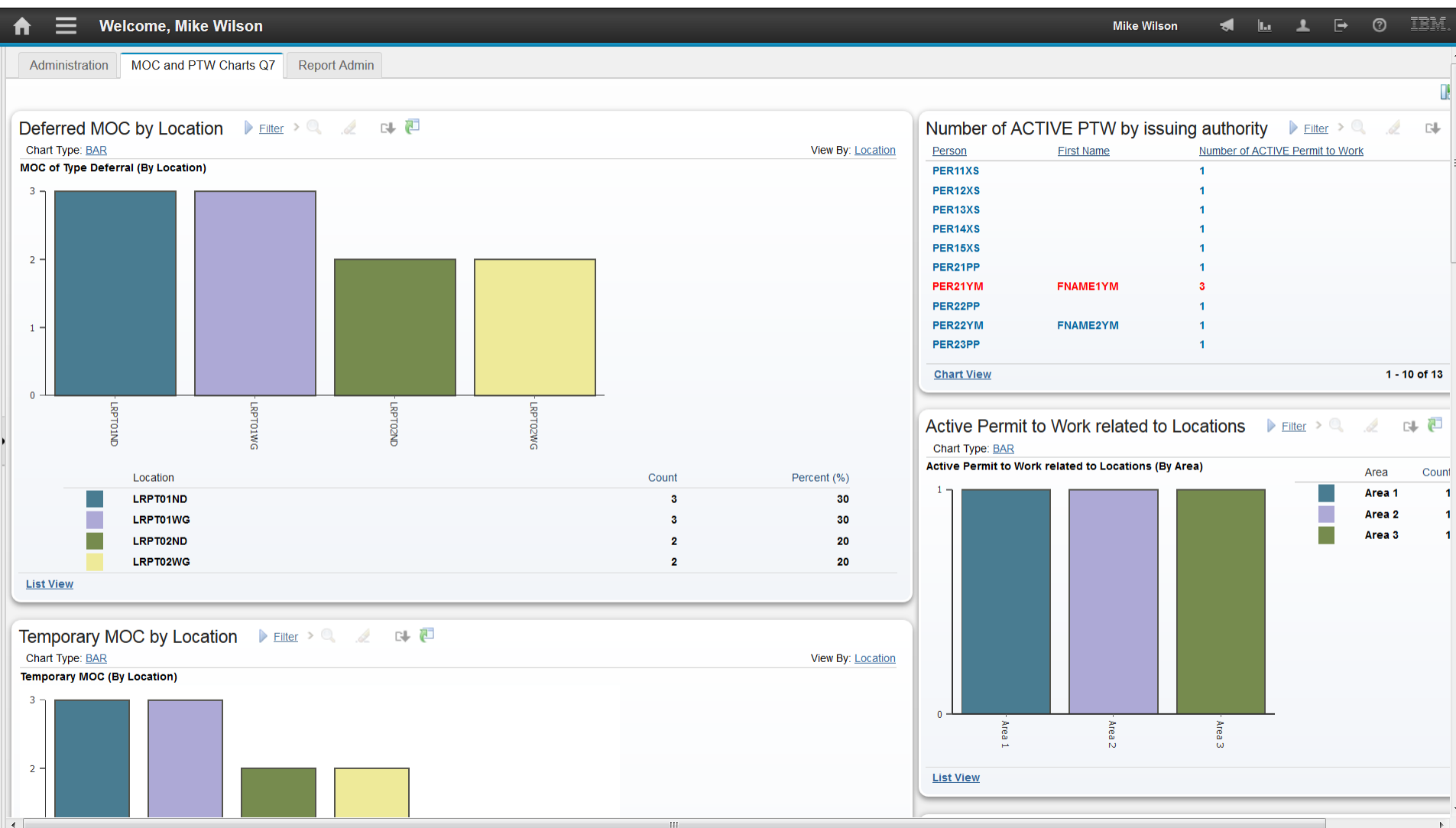
**Certification Details**

Details:

Awarded To: GORMLEY Jim Gormley	Classification: <input type="text"/>
Location: NEEDHAM Needham Site	Class Description: <input type="text"/>
Asset: <input type="text"/>	Risk Assessment: <input type="text"/>

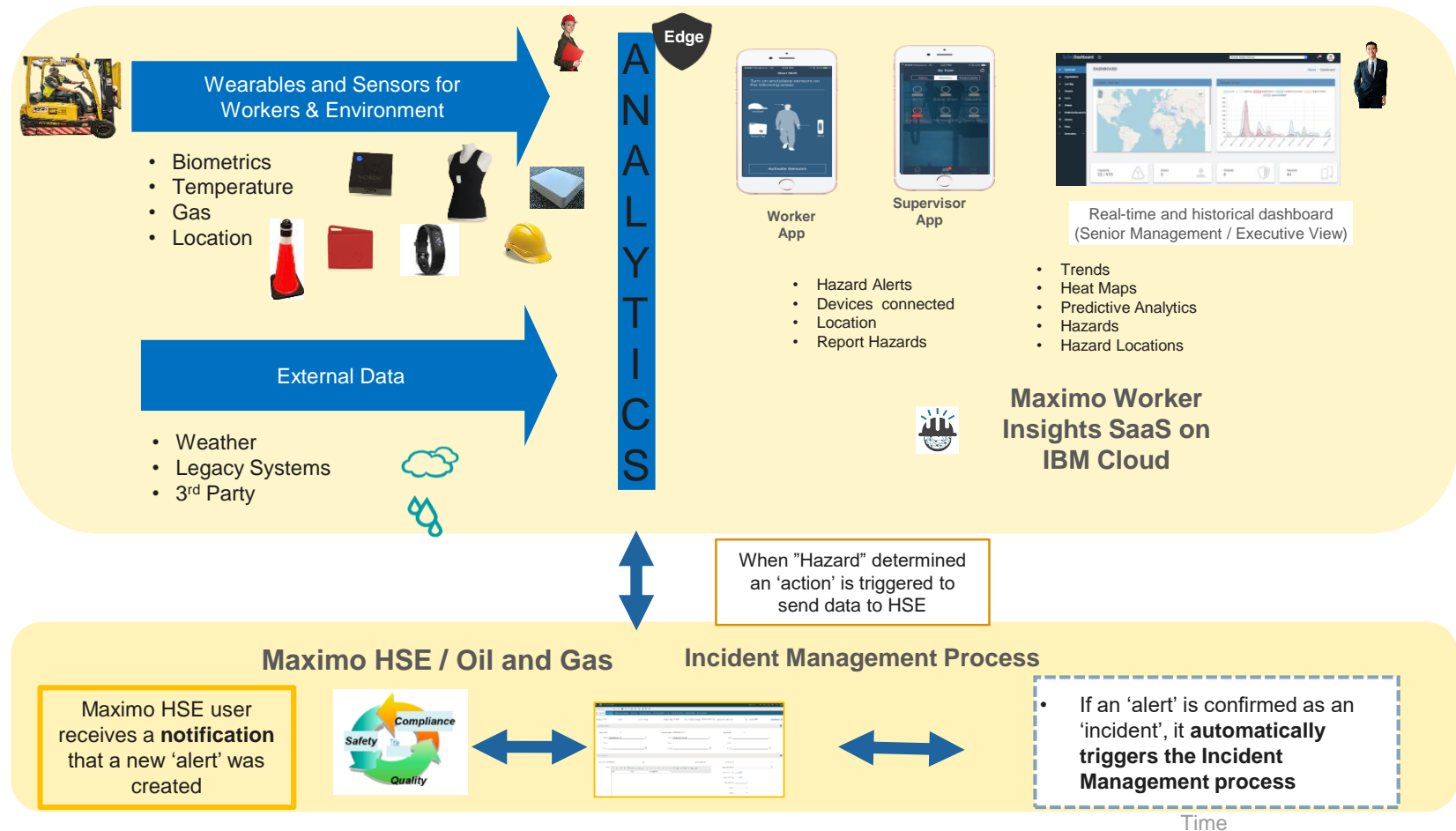
## 8. Acceptance test certification

Note: Created from KPI and Available Queries provided with the product.



# Maximo Worker Insights

Prescriptive and just in time analytics to assist employers in improving workplace safety





## Questions





# Additional product information



# Maximo (Anywhere) Incident Reporter



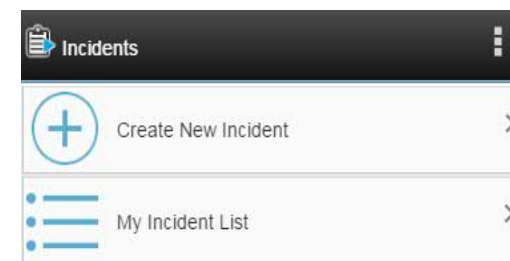
## What is it?

- A mobile application that allows users to quickly capture an incident, hazard or safety observation through their mobile device by leveraging the Maximo Anywhere mobile solution
- Follows a 'what happened?', 'who was involved?', 'where did it happen?', 'action taken' format
- Both, the people involved and the location can be entered together with incident type and category
- Note: additional details and incident follow-up will be entered in the Incidents application by supervisory or safety personnel
- Included with HSE Manager 7.6.1

The screenshot shows the IBM Maximo Incident Reporter login interface. At the top is the IBM logo and the text 'Maximo Incident Reporter'. Below this are two input fields: 'User name' and 'Password'. A blue 'Log In' button is positioned below the password field. At the bottom, there is a copyright notice: '© 2016 IBM Corporation'.



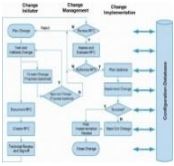


## Prerequisites

- Maximo 7.6.0.x
- Maximo Anywhere 7.6




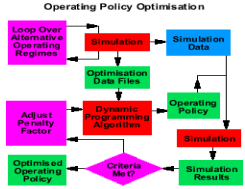
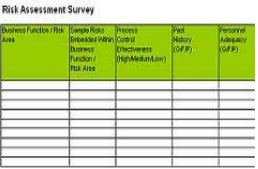
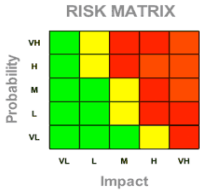

# Features & Benefits of Maximo Oil and Gas



Capability	Benefit
<b>Incidents</b> 	<p>Addresses the continuous need for customers to improve operational performance by creating, reviewing, and analyzing incidents. Includes Self Service Create and Review Incidents. A mobile Incident Reporter application is also included</p>
<b>Investigations</b> 	<p>Allows customers to identify the root cause of problems arising from incidents on their plants that may be safety, environmental, or production related.</p>
<b>Management of Change</b> 	<p>Allows customers to support change requirements in a more robust way with multiple levels of reviews/approvals, authorization of change, pre and post start actions</p>
<b>Defects, Non-Conformance</b> 	<p>Provides non-conformance management capabilities designed to automate, manage, and streamline for identifying, evaluating, reviewing, and handling on non-conforming engineering specifications, materials, components, parts and processes.</p>
<b>Regulatory Compliance</b> 	<p>Identifies regulatory compliance against assets and locations and associates job plans and work orders to these regulations to ensure compliance – significantly reducing the costs associated with compliance</p>


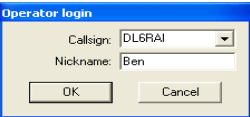



# Features & Benefits of Maximo Oil and Gas (cont.)



Capability	Benefit
<b>Operating Procedures</b> 	Capabilities for documented, step-by-step operating procedures
<b>Operating Policy</b> 	Governance application for structuring your operating policy
<b>Risk Assessment</b> 	Iterative document that links all associated Health, Safety and Environment activities and organizational data. Allows customers to analyze the risks associated with work carried out through the Maximo products, identifying hazards and defining the impact ranking
<b>Risk Matrix</b> 	An application that models both probability and consequences of events supporting risk management processes
<b>Improvements</b> 	Manages continuous improvement programs like Six Sigma or similar methodologies





# Features & Benefits of Maximo Oil and Gas (cont.)



Capability	Benefit
<b>People (Competency Extensions)</b> 	Improves competency assurance through capabilities for adding, modifying, and updating competencies of the workforce
<b>Operators Log</b> 	Electronic log used by shift operators for recording and qualifying events which occur during an individuals shift watch
<b>People (Certification) Tracking</b> 	Complete history of all personnel job roles, certifications, training and current qualifications
<b>Action Tracking</b> 	Allows customers to track statutory implications to ensure certain types of work and actions are completed by the agreed dates
<b>Benefits &amp; Losses</b> 	Captures benefits/losses associated with improvements or costs associated with incidents, failures, survey/audit findings


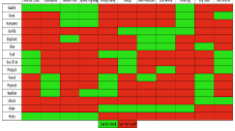




# Features & Benefits of Maximo Oil and Gas (cont.)



Capability	Benefit
<b>Failure Reporting</b> 	Reporting mechanism for capturing metrics to support consistent Failure Reporting and Corrective Action process (FRACAS)
<b>Solutions</b> 	Searchable learning repository associated with lessons learned, or with proven solutions having a safety, operational, maintenance or engineering context
<b>Defects</b> 	Integrated approach to manage or eliminate defects
<b>Bypass Management</b> 	Use to manage bypass operations, also known as inhibits, or overrides, for safety related systems such as Emergency Shutdown, Fire and Gas Systems, Alarm Panels and soft alarms on DCS systems. It can also be used to manage bypasses of mechanical systems such as sprinklers. A further use case is management of security system bypasses.







# Features & Benefits of Maximo HSE (cont.)



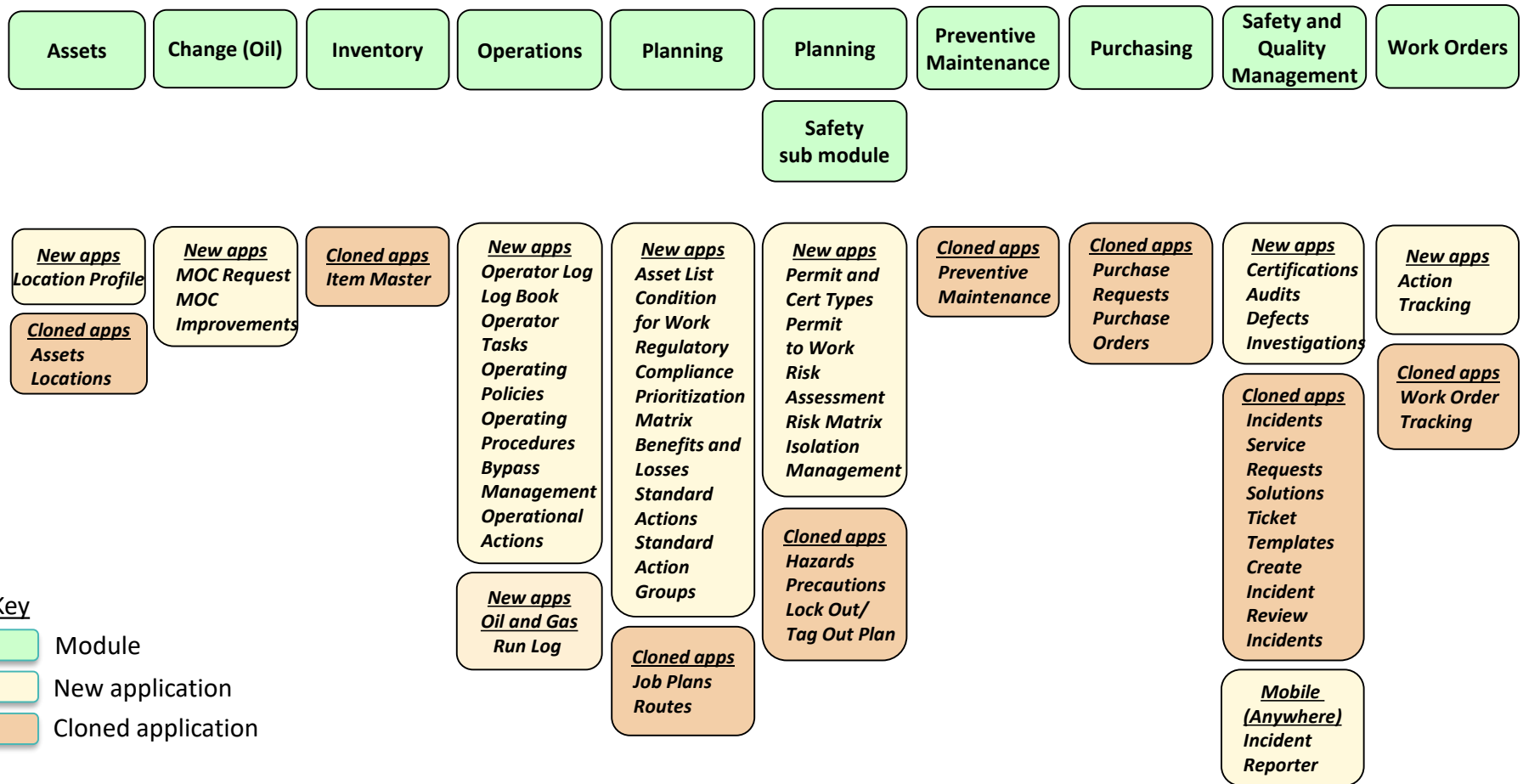
Capability	Benefit
<b>Certifications</b> 	A certification record contains the details that are used to verify that standards for assets or locations are met. They can also be used to make sure that personnel are qualified for specialized tasks.
<b>Location Profile</b> 	Location profiles contain information on production data. You can use location profiles to reduce the production losses that can result from planned or unplanned maintenance shutdowns.
<b>Preparation Activities</b> 	An application to manage the preparation activities that are associated with different phases of scheduled work packages. Preparation activities are tasks that are usually carried out either before assets are put into operation or in preparation for a plant turnaround.
<b>Lock Out/ Tag Out Plan</b> 	Lock out and tag out operations specify a plan of isolation for assets or locations to ensure the safety of the plant. The plans describe how to remove work assets from service and place them back into service
<b>Permit to Work</b> 	A permit to work provides for the effective management of hazards in the work place. The permit to work is frequently used with one or more work orders. You can also generate a permit to work based on an existing work order or task.
<b>Audit and Survey</b> 	Audits are used to evaluate compliance with industry-related regulations or with internal regulations. You can use either audits or surveys to evaluate locations and assets for regulatory compliance.

# Features & Benefits of Maximo HSE (cont.)



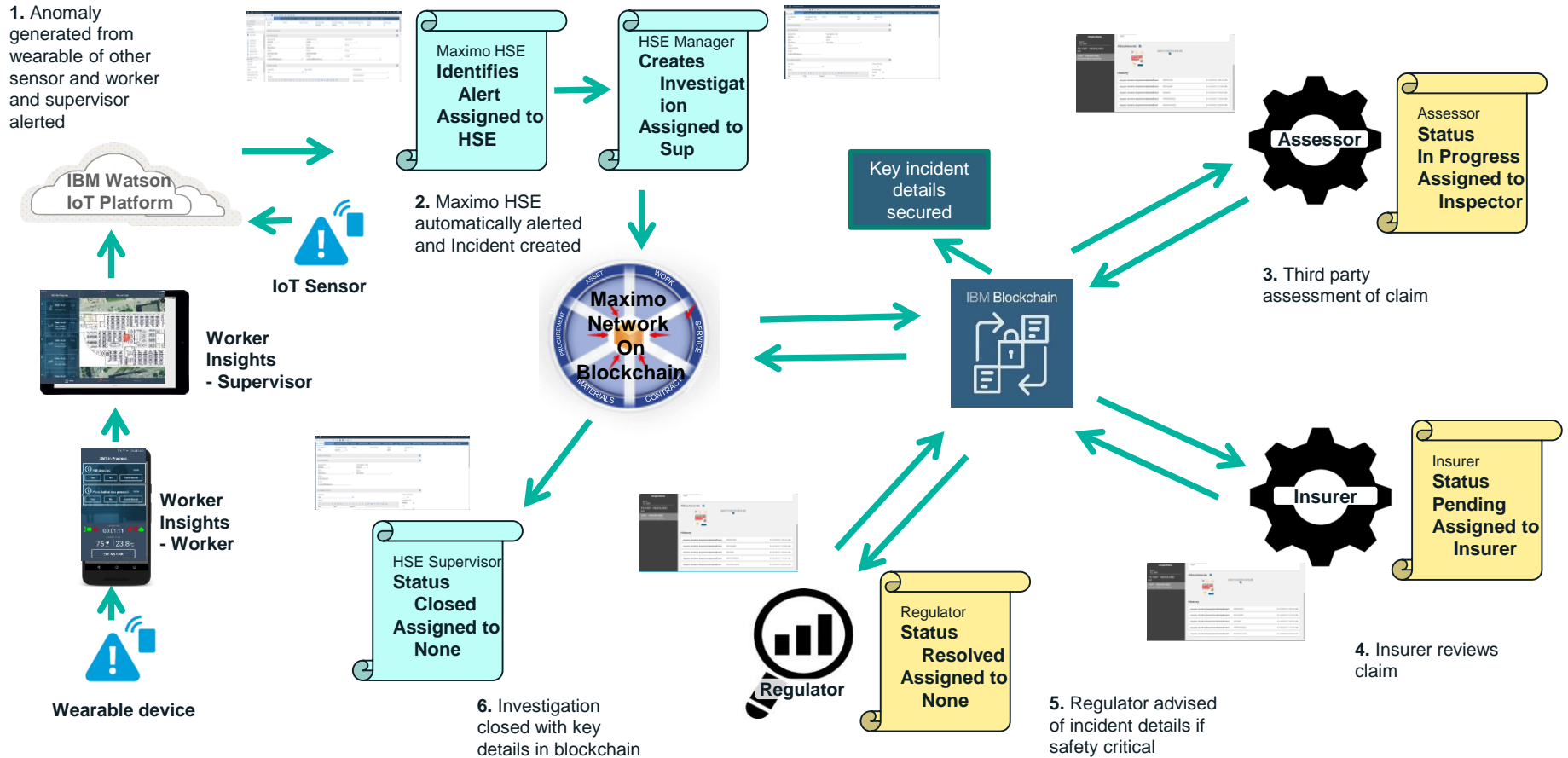
Capability	Benefit
<b>Operational Actions</b> 	Consolidates standard actions across multiple different applications. Supports the sign-off of completion of actions in a single place. Allows standard actions to be added to a Start Center
<b>Log Book</b> 	Provides a way to bring together individual operator logs into a Log Book. Supports the shift handover process.
<b>Isolation Management</b> 	Supports the scenario where customers want to manage isolation separately from a permit. Fully integrated with permit to work if required.
<b>Incident Reporter</b> 	A Maximo Anywhere based mobile application to report an incident, hazard or safety observation. Supports disconnected operation. Also provides the ability to view your reported incidents from the mobile device
<b>Certifications (Environmental Consents)</b> 	Extension of Certification application to support the management of environmental consents and regulatory permits.
<b>Assets &amp; Locations (FMECA Criticality)</b> 	Extensions to Assets and Locations to provide failure mode analysis and criticality analysis.

# Maximo HSE Manager Module and Application Structure





# Incident Management Use Case with Maximo HSE, Maximo Worker Insights and a Blockchain



# The sentient machine: Infusing Maximo HSE processes with AI

- Improving data quality
- Decision support
- Providing new insights into safety data



# Safety Moment

