Solving the Spare Parts Business Process

with a Custom APEX Solution that integrates with EBS

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Solving Complex Business and Technology Problems With Experience and Knowledge

About AXIA Consulting

- Founded in 2005
- Approximately 100 Senior Consultants, averaging 20 years of industry experience
- 100% Employee Owned

Core Values….

Be Vested
Be Authentic
Be There
Be Approachable
Be Honest

Committed To Excellence

Because of our commitment to excellence, many of our client relationships start with a project and turn into lasting partnerships.

Local & Global

Delivering results for clients a in more than 54 countries over six continents.

AXIA Consulting helps clients identify and solve complex problems with teams of experts averaging over 20 years of experience. AXIA is different than other integrators because we do not “leverage” a few highly experienced consultants with less experienced resources. AXIA staffs projects with seasoned and experienced consultants.

AXIA Oracle Service Offerings

Oracle Consulting	Implementations and Functional Extensions	EBS Assessments & Roadmap
Mergers & Acquisitions	Upgrades	Client Advisory Services

About The Speaker

Matt Hauser

- Technical PM / Senior Business Analyst / Development Lead / Employee Owner
- 13 years of Consulting Experience
- 6 years in Industry
- Extensive EBS Experience
  - Inventory
  - BOM
  - Purchasing
  - iStore
  - PIM
  - iSupplier
  - Order Management

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Session Objectives

- Understand the business problem and drivers for a new solution
  - Intelligrated will be used as the example
- Understand how Oracle's APEX product can be used to build custom solutions
- Understanding the Business Requirements to perform the task
- To model the solution approach in Oracle APEX
- To model out of the box functionality within Oracle APEX
- Identifying the Benefits of the new solution

Intelligrated

Intelligrated®

- Leading North American-owned, single-point provider of automated material handling solutions with operations in multiple countries
- Designs, manufactures and installs complete material handling automation solutions, including: line sortation systems, loop sortation systems, conveyor systems, and palletizers
- Segment of the business is spare parts for the full systems that they design and manufacture
  - Spare parts can be designated as a standard spare part or critical spare part
  - A list of spare parts can be requested by the customer throughout the lifecycle of a project and after the project has concluded, including at the time of a quote, or years after the solution was installed

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Cumbersome Process

Problem:

- The old solution for creating Spare Parts lists utilized a legacy .net application which was understood by a very limited number of IT and business resources

- Business Processes were very cumbersome and the IT solution was not utilizing strategic software. It relied on:
  - Importing data from Oracle
  - vlookups of data into Customer Facing Reports
  - Manual manipulation of data into Customer Facing Reports

New Solution

Solution:

- The new solution needed to be as good or better than the legacy solution

- The legacy solution had some functionality that would be difficult to replicate in standard Oracle Forms, such as pivot table analysis

- Oracle APEX was chosen as the solution because of its ease of use for development activities and its out of the box functionality

Ability Requirements:

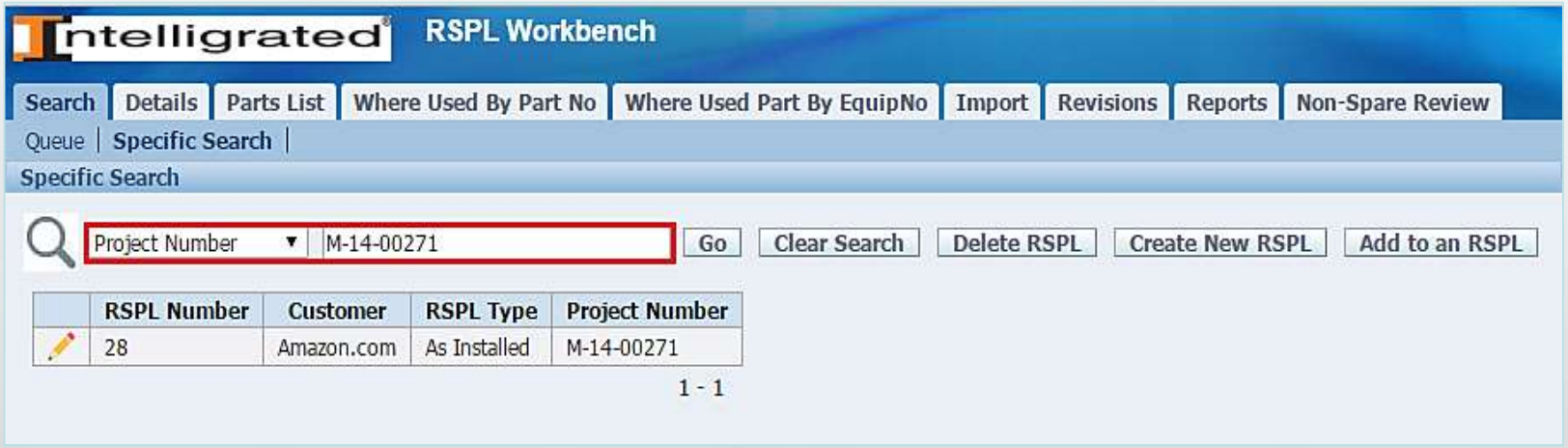
- Change Spare Flag and Spare Type designations
- Exclude items from a Recommended Spare Parts List (RSPL)
- Create multiple versions of the same RSPL based on the current stage of the lifecycle (As Proposed vs. As Installed)
- Edit the BOMs and Sales Order lines of what was shipped
- Pull in Customer Specific Pricing
- Perform Slicing and Dicing of data on the fly
- Import data from outside systems

Starting the Process

In order to build a new RSPL a Project or Sales Order is used as the starting point.

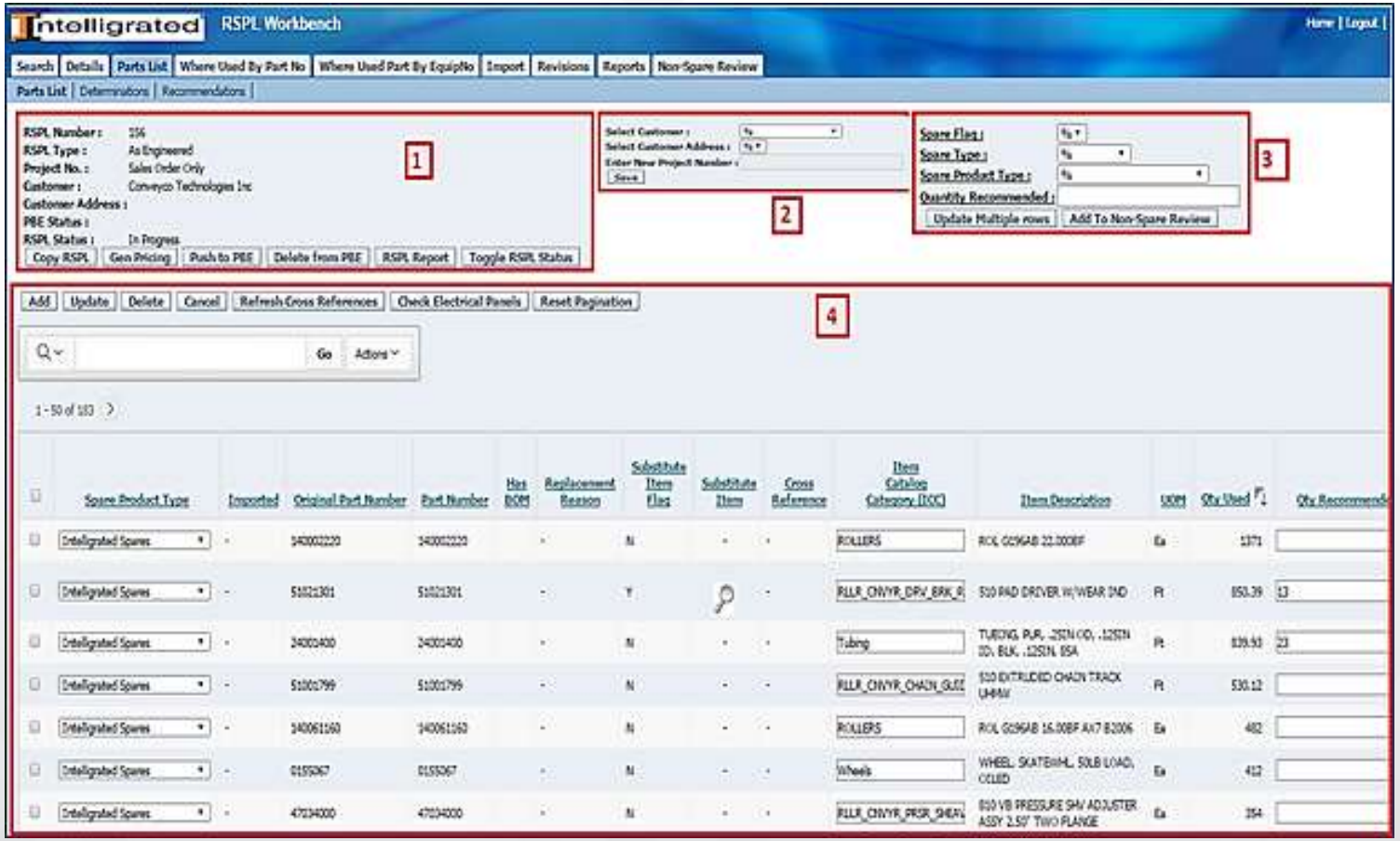
In order to begin the user can search by:

- Created By
- Customer
- Project Number
- RSPL Number
- Sales Order
- Spare Product Type



Part List Tab

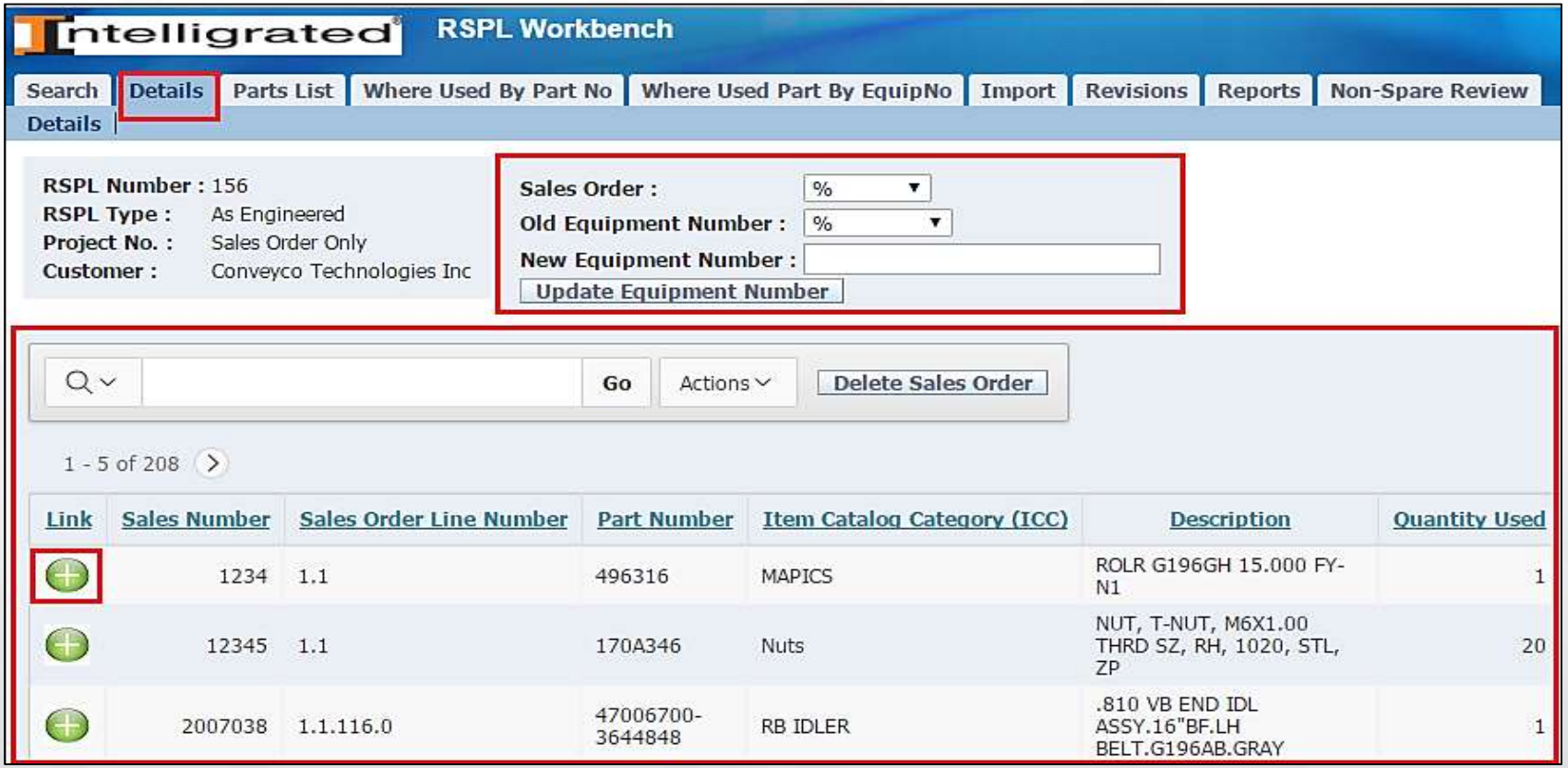
Different sections utilized to provide different functionality on the same screen



1. Header Information
2. Change Header Information
3. Update Values for Multiple rows
4. Main Report – Change individual rows

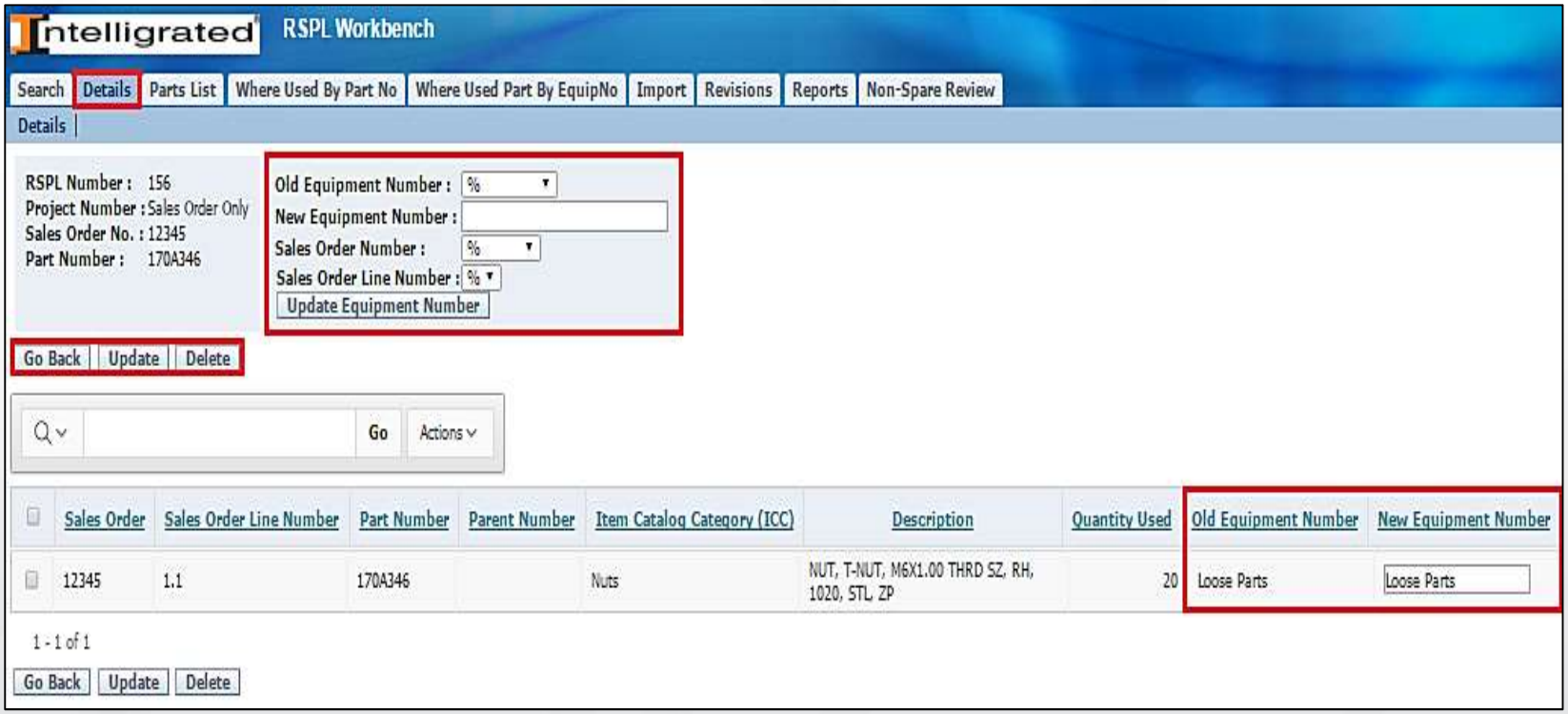
Detail Tab

The Details Tab shows all the sales order lines, and explodes their BOMs, so the user can edit an individual part within a sales order line's BOM



Detail Tab

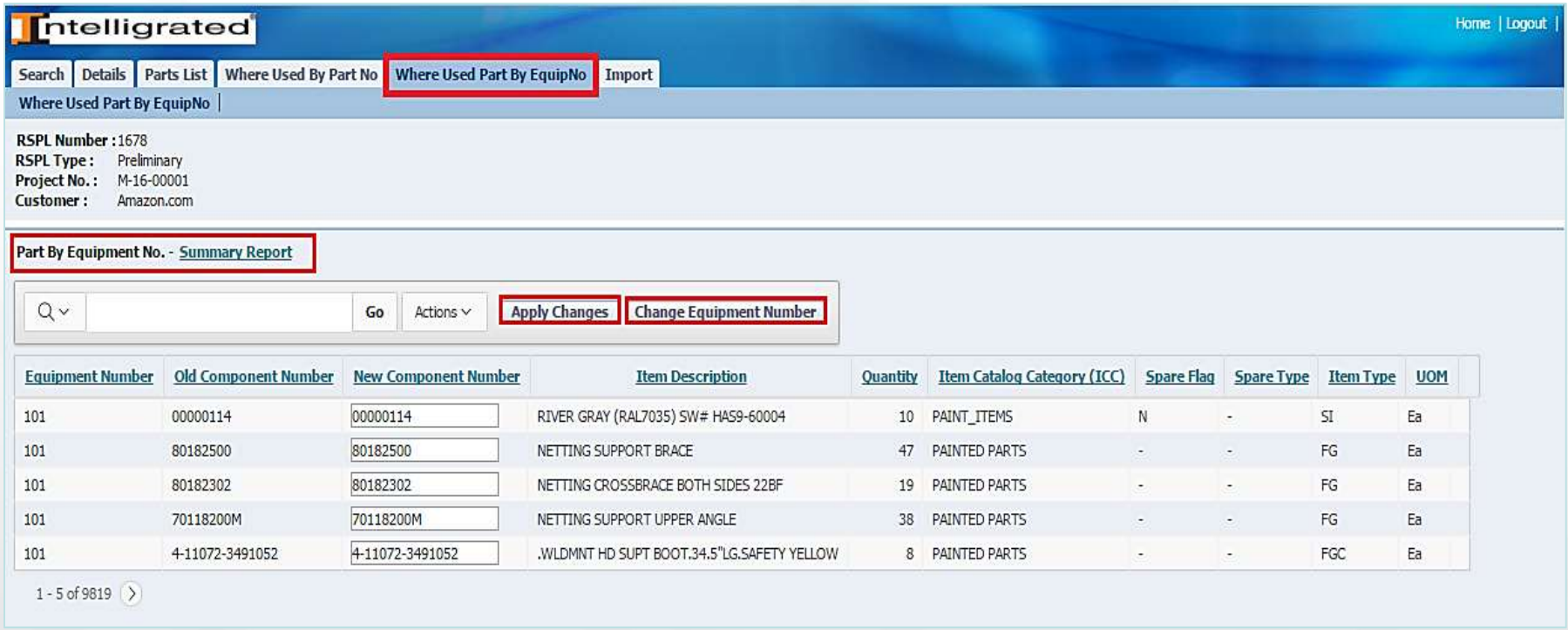
Once you drill into an individual line, you can change the equipment number, the component number and the quantity



- All changes cascade to the other tabs

Where Used Tabs

The Where Used tabs show all the parts that are used on an RSPL, by equipment number

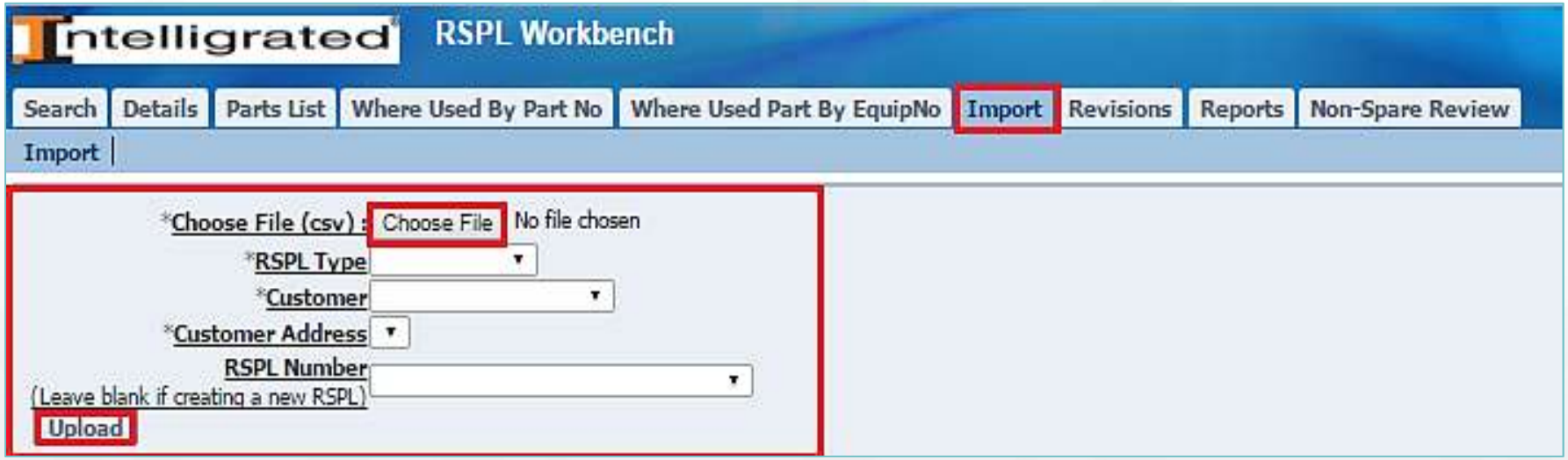


Equipment Number	Old Component Number	New Component Number	Item Description	Quantity	Item Catalog Category (ICC)	Spare Flag	Spare Type	Item Type	UOM
101	00000114	00000114	RIVER GRAY (RAL7035) SW# HAS9-60004	10	PAINT_ITEMS	N	-	SI	Ea
101	80182500	80182500	NETTING SUPPORT BRACE	47	PAINTED PARTS	-	-	FG	Ea
101	80182302	80182302	NETTING CROSSBRACE BOTH SIDES 22BF	19	PAINTED PARTS	-	-	FG	Ea
101	70118200M	70118200M	NETTING SUPPORT UPPER ANGLE	38	PAINTED PARTS	-	-	FG	Ea
101	4-11072-3491052	4-11072-3491052	.WLDMNT HD SUPT BOOT.34.5"LG.SAFETY YELLOW	8	PAINTED PARTS	-	-	FGC	Ea

- On this screen you can change a component number or an equipment number
- All changes cascade to the other tabs

Import Tab

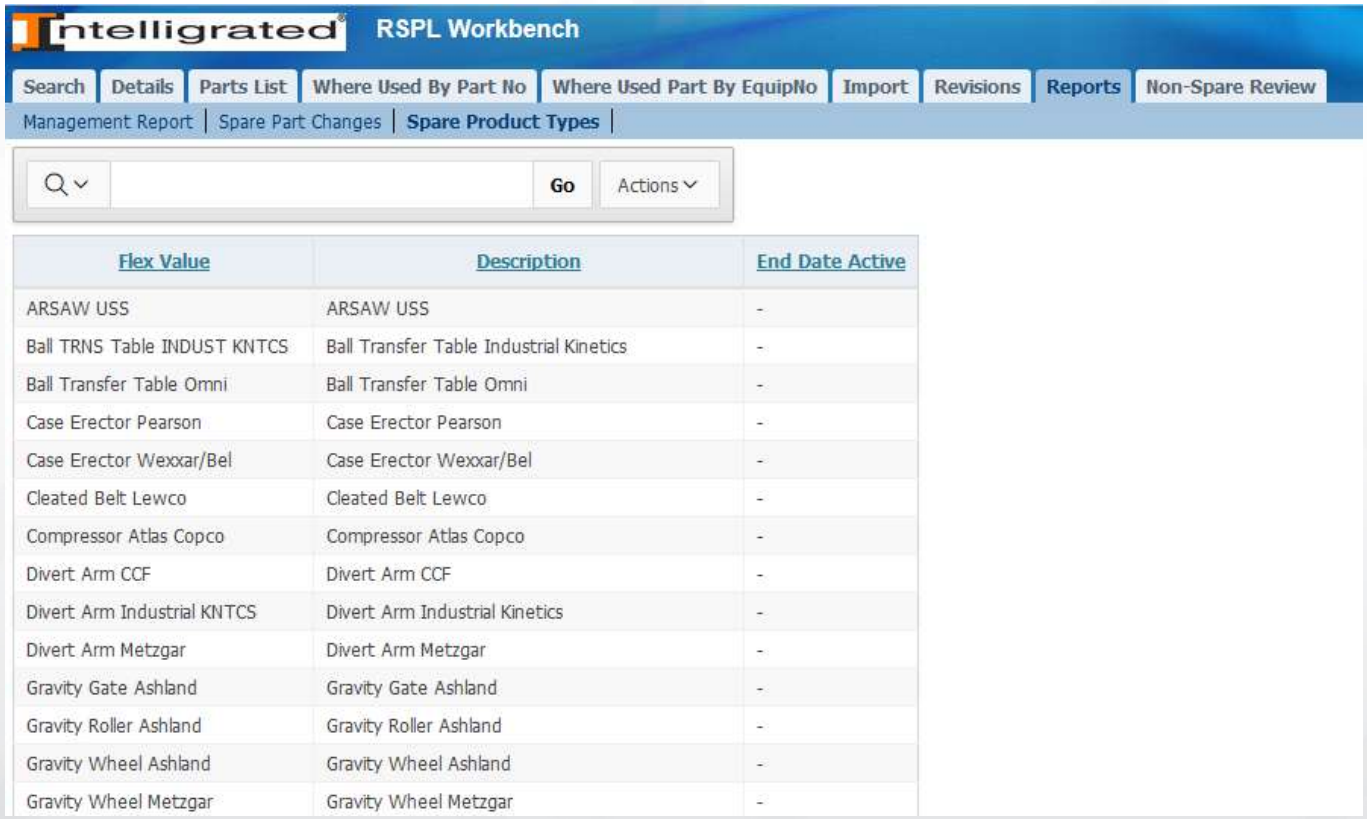
The Import Tab allows the user to import data that may not exist on Sales Orders within Oracle



- The user can add it to an existing RSPL or create a brand new RSPL
- If the part numbers on the import file are not within Oracle, the user receives an exception report so the items can be inducted

Reports Tab

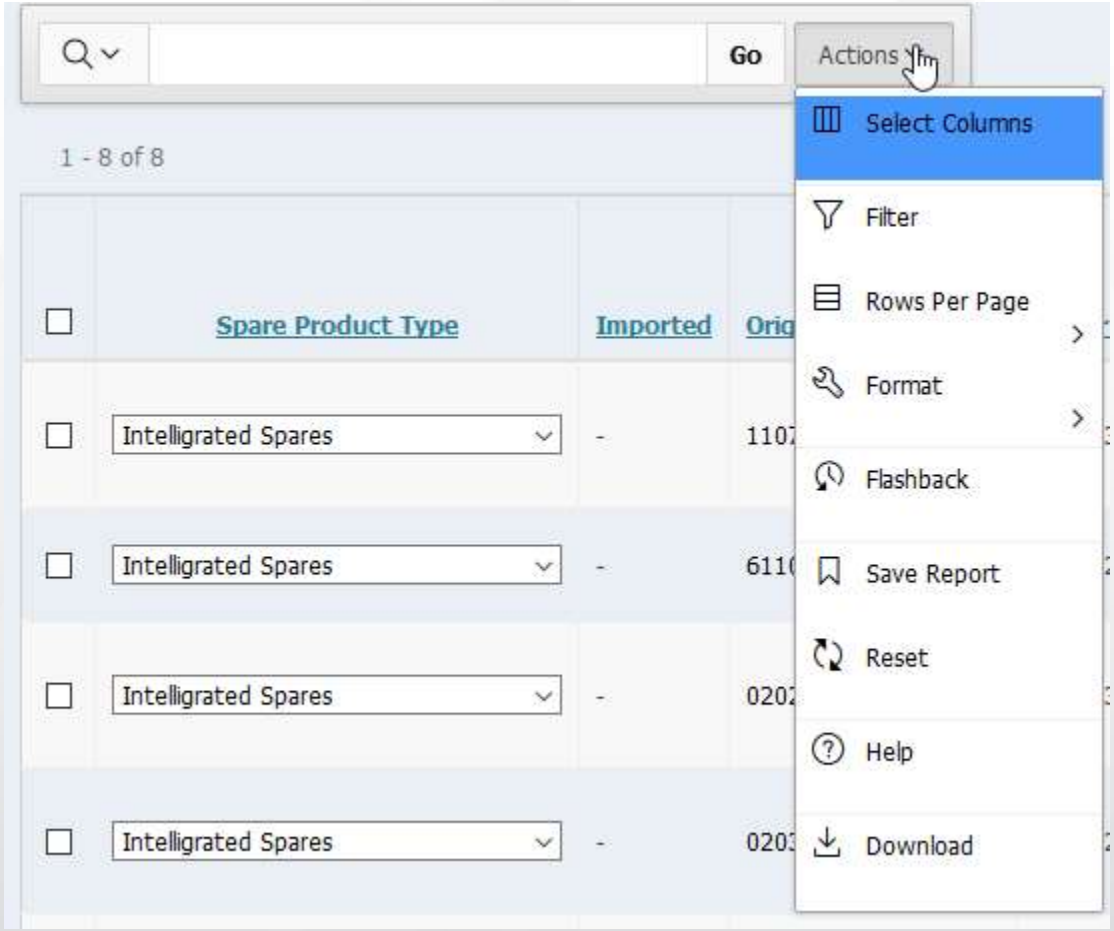
There are 3 main reports used by the RSPL team to review data:



Flex Value	Description	End Date Active
ARSAW USS	ARSAW USS	-
Ball TRNS Table INDUST KNTCS	Ball Transfer Table Industrial Kinetics	-
Ball Transfer Table Omni	Ball Transfer Table Omni	-
Case Erector Pearson	Case Erector Pearson	-
Case Erector Wexxar/Bel	Case Erector Wexxar/Bel	-
Cleated Belt Lewco	Cleated Belt Lewco	-
Compressor Atlas Copco	Compressor Atlas Copco	-
Divert Arm CCF	Divert Arm CCF	-
Divert Arm Industrial KNTCS	Divert Arm Industrial Kinetics	-
Divert Arm Metzgar	Divert Arm Metzgar	-
Gravity Gate Ashland	Gravity Gate Ashland	-
Gravity Roller Ashland	Gravity Roller Ashland	-
Gravity Wheel Ashland	Gravity Wheel Ashland	-
Gravity Wheel Metzgar	Gravity Wheel Metzgar	-

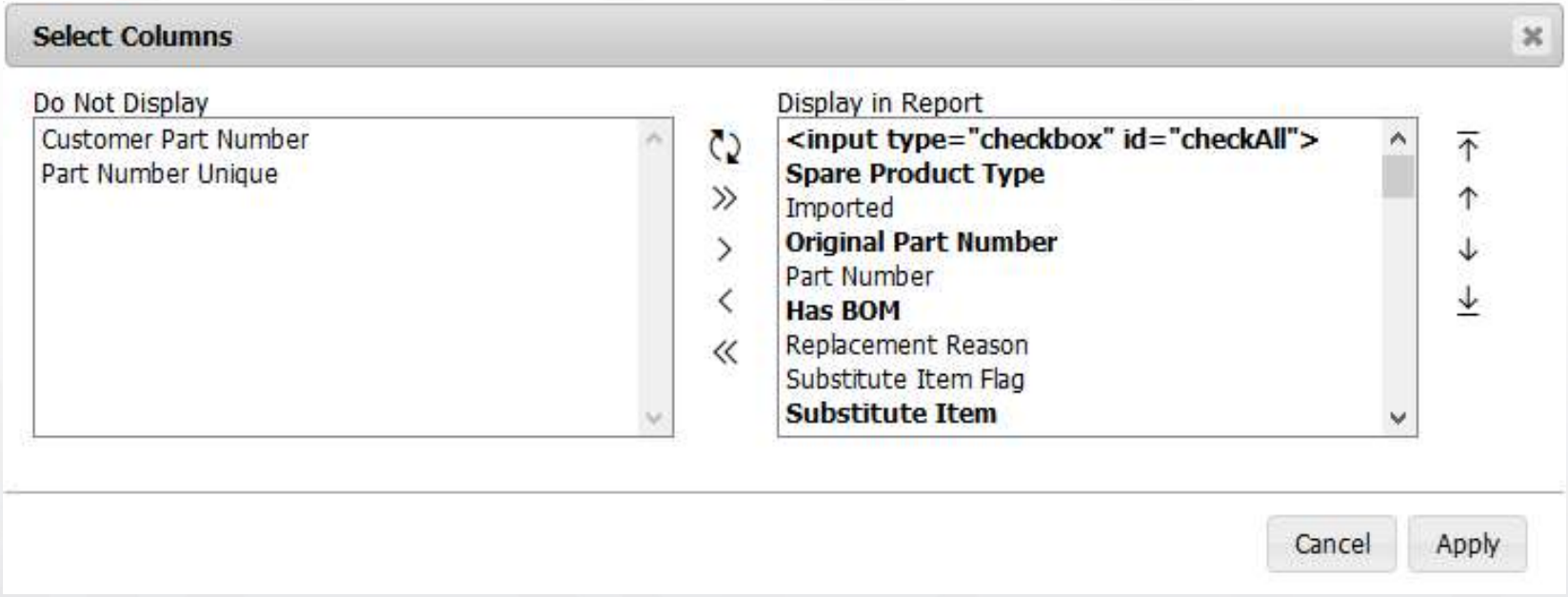
- All 3 are straight data dumps, but utilizing APEX out of the box functionality, they can be personalized by the end user to see the data they want to see

A default view is created during development, but it can be changed using the standard Actions button and saved as a personal view



Select Columns

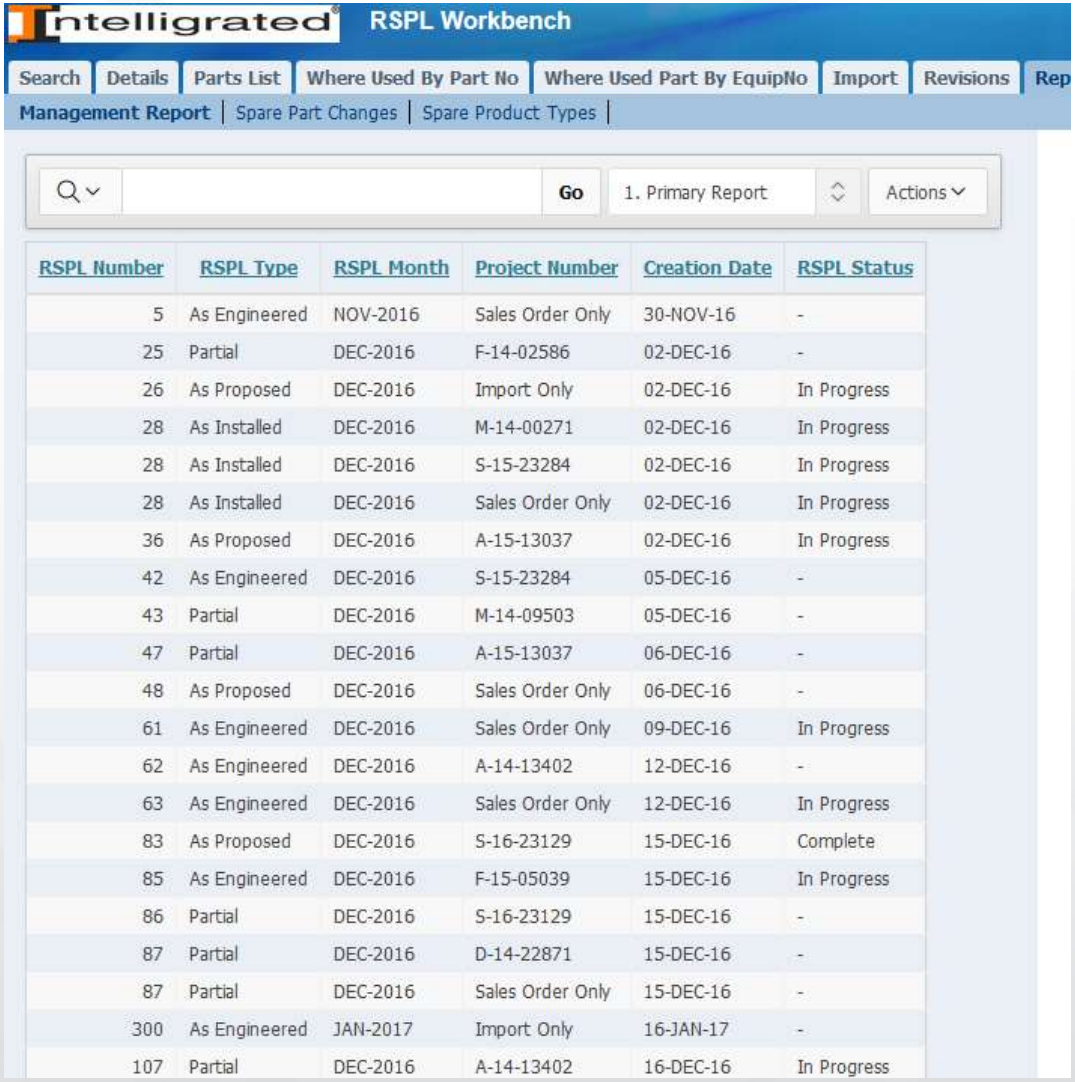
Select Columns allows the ability to add and remove columns from the list of columns displayed



- Many columns are rarely used, but may be needed in particular use cases so this allows them to change the view that they are working in

Control Breaks, Totals & Highlighting Example

Initial Data Screen



RSPL Number	RSPL Type	RSPL Month	Project Number	Creation Date	RSPL Status
5	As Engineered	NOV-2016	Sales Order Only	30-NOV-16	-
25	Partial	DEC-2016	F-14-02586	02-DEC-16	-
26	As Proposed	DEC-2016	Import Only	02-DEC-16	In Progress
28	As Installed	DEC-2016	M-14-00271	02-DEC-16	In Progress
28	As Installed	DEC-2016	S-15-23284	02-DEC-16	In Progress
28	As Installed	DEC-2016	Sales Order Only	02-DEC-16	In Progress
36	As Proposed	DEC-2016	A-15-13037	02-DEC-16	In Progress
42	As Engineered	DEC-2016	S-15-23284	05-DEC-16	-
43	Partial	DEC-2016	M-14-09503	05-DEC-16	-
47	Partial	DEC-2016	A-15-13037	06-DEC-16	-
48	As Proposed	DEC-2016	Sales Order Only	06-DEC-16	-
61	As Engineered	DEC-2016	Sales Order Only	09-DEC-16	In Progress
62	As Engineered	DEC-2016	A-14-13402	12-DEC-16	-
63	As Engineered	DEC-2016	Sales Order Only	12-DEC-16	In Progress
83	As Proposed	DEC-2016	S-16-23129	15-DEC-16	Complete
85	As Engineered	DEC-2016	F-15-05039	15-DEC-16	In Progress
86	Partial	DEC-2016	S-16-23129	15-DEC-16	-
87	Partial	DEC-2016	D-14-22871	15-DEC-16	-
87	Partial	DEC-2016	Sales Order Only	15-DEC-16	-
300	As Engineered	JAN-2017	Import Only	16-JAN-17	-
107	Partial	DEC-2016	A-14-13402	16-DEC-16	In Progress

Control Breaks, Highlighting & Totals

- Added a control break for the Created By
- Added highlighting for Jan-2017
- Add totals

Created By :	Minnie Mouse				
RSPL Number	RSPL Type	RSPL Month	Project Number	Creation Date	RSPL Status
20344	As Proposed	JAN-2017	IQ-16-42023B	18-JAN-17	In Progress
20356	Partial	JAN-2017	S-15-23830	19-JAN-17	In Progress
48497	As Engineered	FEB-2017	F-13-03706	14-FEB-17	In Progress
48492	Partial	FEB-2017	M-13-00253	14-FEB-17	In Progress
48472	Partial	FEB-2017	Sales Order Only	08-FEB-17	In Progress
48471	Partial	FEB-2017	M-14-00520	07-FEB-17	In Progress
48470	Partial	FEB-2017	F-15-02053	03-FEB-17	In Progress
Count:7					
Created By :	Mickey Mouse				
RSPL Number	RSPL Type	RSPL Month	Project Number	Creation Date	RSPL Status
45222	Preliminary	FEB-2017	EK246	01-FEB-17	In Progress
20466	Preliminary	JAN-2017	BD132	31-JAN-17	In Progress
45213	Preliminary	FEB-2017	A-13-12262	01-FEB-17	In Progress
Count:3					
Created By :	Donald Duck				
RSPL Number	RSPL Type	RSPL Month	Project Number	Creation Date	RSPL Status
20461	As Proposed	JAN-2017	M-14-00298	30-JAN-17	In Progress
Count:1					
Created By :	Daisy Duck				
RSPL Number	RSPL Type	RSPL Month	Project Number	Creation Date	RSPL Status
45303	Preliminary	FEB-2017	KH93	01-FEB-17	In Progress
45248	Preliminary	FEB-2017	F2203	01-FEB-17	In Progress
Count:2					

Formatting Example

Control Break:

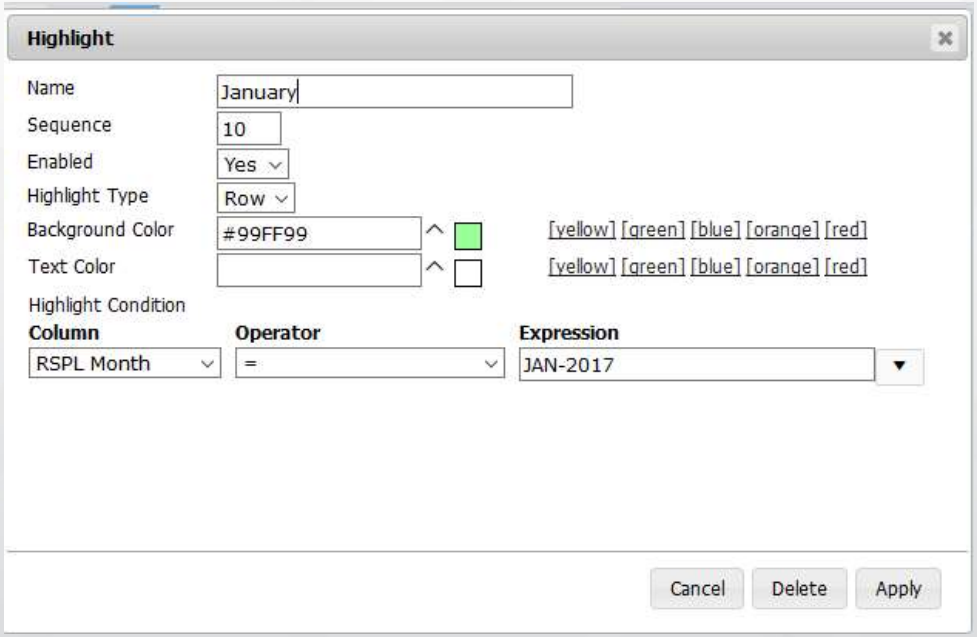
– Actions > Format > Control Break

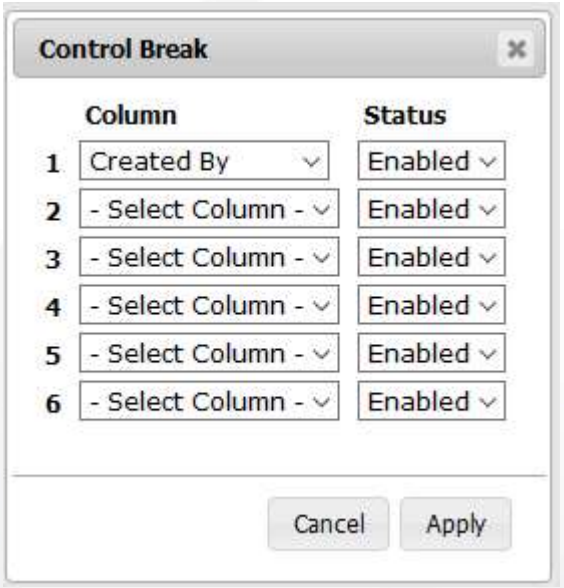
Totals:

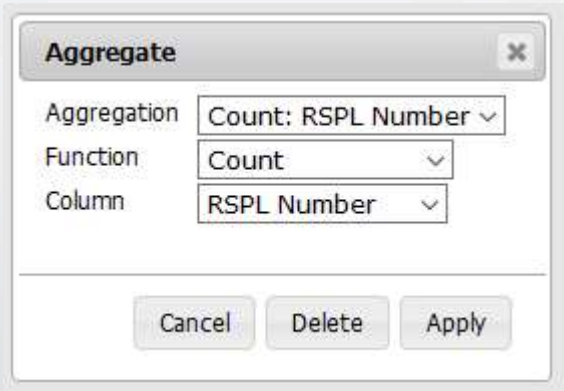
– Actions > Format > Aggregate

Highlighting:

– Actions > Format > Highlight







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Format

Format has a lot of powerful tools that can be used to help slice and dice data for the users:

- **Sort:** Changes the columns to sort and determines whether to sort in ascending or descending order
- **Control Break:** Creates a break group on one or several columns. This pulls the columns out of the interactive report and displays them as a master record
- **Highlight:** Defines a filter that highlights the rows that meet the filter criteria
- **Compute:** Enables users to add computed columns to a report
- **Aggregate:** Enables users to perform mathematical computations against a column
- **Chart:** Displays the report data as a chart
- **Group By:** Enables users to group the result set by one or more columns and perform mathematical computations against columns

Benefits

Tool resides in Oracle, item data is real-time:

- Data & Electrical BOMs are available immediately, eliminating nightly feed wait for the legacy system
- Spare designation is real-time and resides in the Oracle Item Master, Oracle is now the record of truth for spare information
- Pricing can now be generated directly in the Spare List, without the need to use an uploader
- Any process that could take a long time is run as a concurrent request in the background so the user can continue to work
  - In the Legacy Tool if you are running a long running request you can not continue to work, sometimes you can wait over an hour.
    - Creating a new RSPL
    - Creating a new RSPL Report
    - Generating Pricing
    - Swapping out Cross References

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Benefits cont.

Better Definition:

- Ability to better define RSPLs to stages of the lifecycle process
  - As Proposed
  - Partial
  - As Engineered
  - As Installed
  - As Exists
- Spare Type gives the ability to add additional types of spares in the future
- Normalization of Spare Product Types presented internally and externally, through standard drop down menus
- Some Spare Product Types are determined by the Item's Classification, capitalizing on the PDS project
  - Intelligrated Spares
  - Electrical Spares
  - Scanner – Cognex
  - Scanner – Sick

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Benefits cont.

Data Automation: Manual Data Manipulation has been automated

- The finalized report from Legacy System had to have manual data manipulation performed.
  - Substitute Items had to be manually swapped out (ex. Driver Pad vs Driver Pad Roll)
  - Items listed on multiple sheets had to be combined to remove duplication
  - Old report showed all conveyors in the “Where Used by Conveyor” column, at times over 175 conveyors in 1 cell, which was un-readable
- New Process:
  - Substitute Items are now available to be swapped out in the workbench
  - Items are forced to be on 1 sheet in the new workbench
  - Where Used tab now has the asset number on each line
  - The “Where Used by Conveyor” column has been changed to be “Number of Assets Used In”, which shows a count instead of listing out every conveyor in the cell

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Questions