RAMCO AVIATION SOLUTION

ENHANCEMENT NOTIFICATION

Version 5.8.9

Maintenance

Contents

WHAT'S NEW IN CONFIGURATION MANAGEMENT?

Ability to specify 'Position Type' upon Part Movement between positions in a physical configuration

Reference: APRP-164

Background

Currently, all the components attached below an engine have the position type as engine. When such a position is moved to an aircraft level, the system validates, as there will be a mismatch between the number of engine positions and the configuration class definition. In order to rectify this, users have to first revise the part and component configuration in order to resolve it. This gets cumbersome for them. Hence, a provision to specify the position type, upon moving parts between positions in a configuration is needed that could help the users in overcoming this problem.

Change Details

Common Master

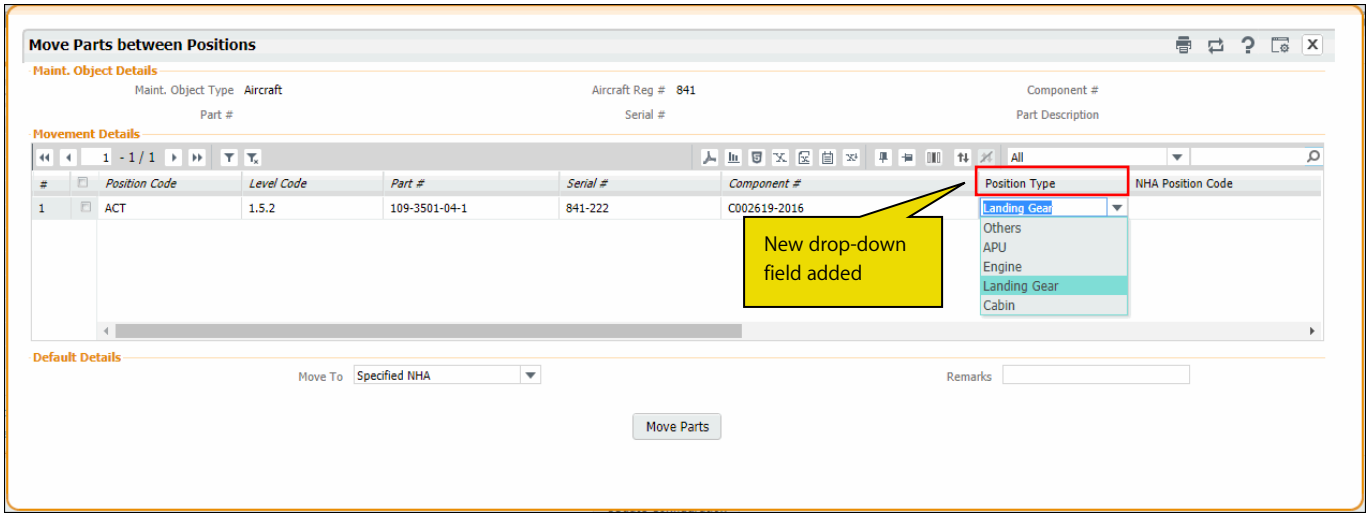
Two new process parameters are added under the Entity Type 'Tech Records Process Ctrl' and Entity 'Configuration' in the **Define Process Entities** activity of the **Common Master** business component.

- Process parameter 'Auto-update component type of the component that is moved in the configuration with the specified position type?' with the following permitted values:
  - 0 (No) – Component Type does not update automatically upon position type modification for a position.
  - 1 (Yes) – Component Type automatically updates upon position type modification for a position.
- Process parameter 'Inherit position type of component to its sub-components upon position type change during Parts movement in Aircraft/Component Configuration' with the following permitted values:
  - 0 (No) – Position Type does not inherit to child components upon parts movement post position type modification to a new position type.
  - 1 (Yes) - Position Type is inherited to child components upon parts movement post position type modification to a new position type.

Parts Movement between Positions

A new drop-down field 'Position Type' is added in the "Movement Details" multiline of the **Move Parts between Positions** screen of the **Component Replacement** business component. This field specifies the position type of the position that is being moved to the new location. The system lists the position type values 'Others', 'APU', 'Engine', 'Landing Gear' and 'Cabin'.

Exhibit 1: Identifies the **Move Parts between Positions** screen



Ability to inherit the sequence of the newly inserted position(s) from Model/Part to their corresponding Aircrafts/Components

Reference: APRP-165

Background

Currently, when a new position is inserted in a Model/Part Configuration, the same will be inherited in the corresponding Aircraft/Component Configurations, but with the sequence # as the last one. Currently, the provision of inheriting the sequence # in the exact sequence from the Model/Part to the corresponding Aircraft/Component configuration upon addition of a new position in the Model/Part configuration is not available. In this enhancement, the same sequential inheritance of the newly added position from Model/Part to Aircrafts/Components under them is provided, in order to avoid the additional steps of user having to manually change the sequence #s in all the affected Aircrafts/Components.

Change Details

Common Master

Define Process Entities

The following process parameters are added under the Entity Type 'Tech Records Process Ctrl' and Entity 'Configuration' in the **Define Process Entities** activity of the **Common Master** business component.

i. The process parameter 'Inherit Sequence of Position Code from Model to applicable Aircrafts?' is added with the following permitted values:

- '0' (No) – Retains the existing behavior of inheriting the newly inserted position from Model as the last in sequence for the corresponding applicable Aircrafts.
- '1' (Yes) – Inherits the Sequence # of the new position from Model as the same in sequence for the corresponding applicable Aircrafts.

ii. The process parameter 'Inherit Sequence of Position Code from Part to applicable Components?' is added with the following permitted values:

- '0' (No) – Retains the existing behavior of inheriting the newly inserted position from Part as the last in sequence for the corresponding applicable Components.
- '1' (Yes) – Inherits the Sequence # of the new position from Part as the same in sequence for the corresponding applicable Components.

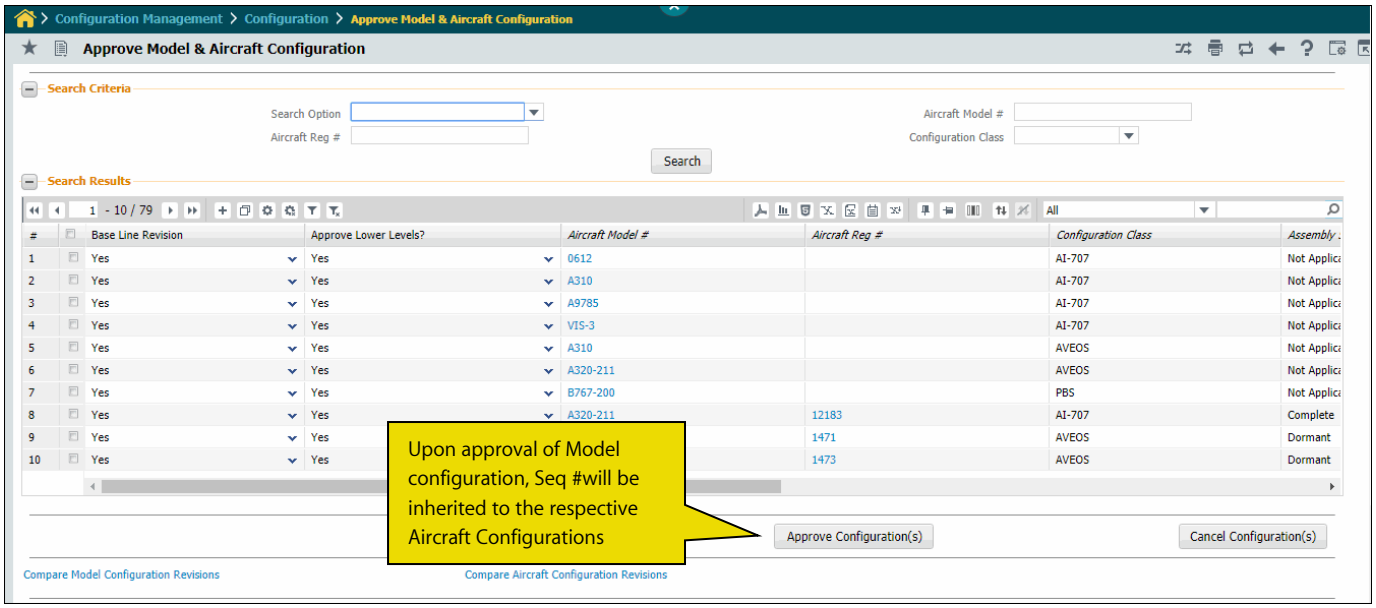
Configuration

Approve Model & Aircraft Configuration

- On click of the "Approve Configuration(s)" pushbutton in the **Approve Model & Aircraft Configuration** screen, if the process parameter 'Inherit Sequence of Position Code from Model to applicable Aircrafts?' is set as '1' and if "Inherit Changes to Aircraft" checkbox is checked, then the Sequence # of the new position in Aircraft model is inherited to the corresponding applicable Aircrafts.
- On click of the "Approve Configuration(s)" pushbutton in the **Approve Model & Aircraft Configuration** screen, if the process parameter 'Inherit Sequence of Position Code from Model to applicable Aircrafts?' is

set as '0' and if "Inherit Changes to Aircraft" checkbox is checked, then the system retains the existing behavior of inheriting the newly inserted position as the last in sequence for the corresponding applicable Aircrafts.

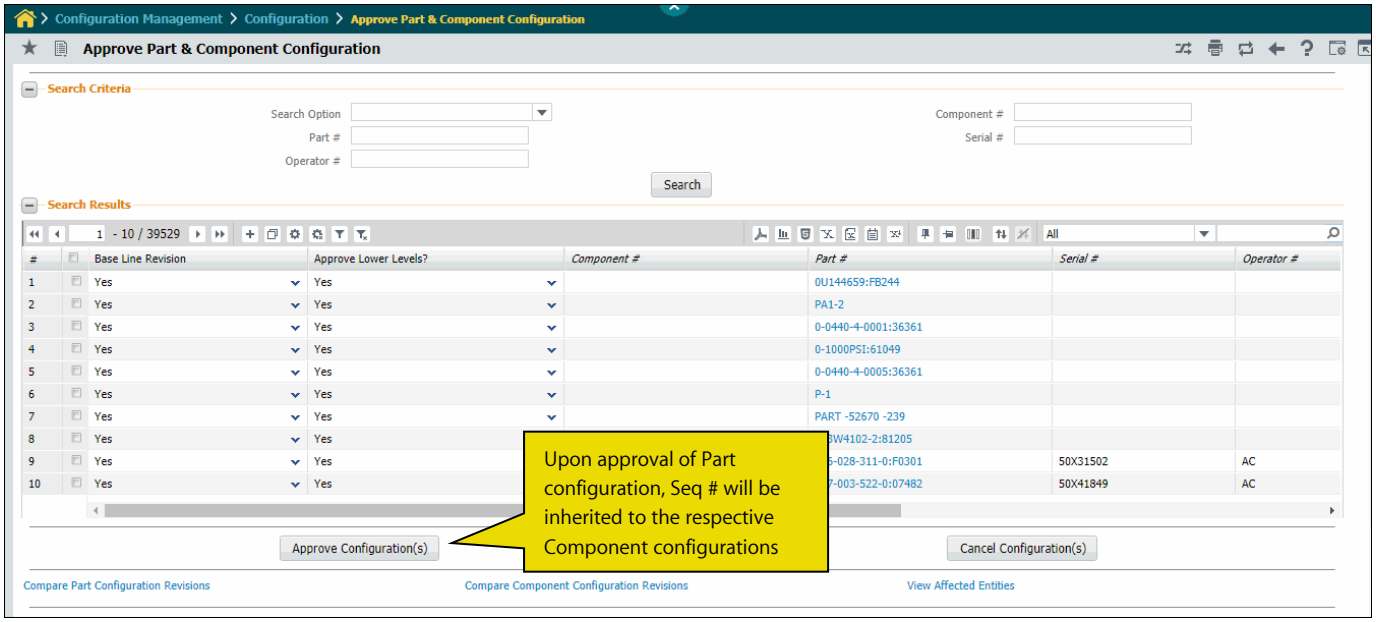
Exhibit 1: Identifies the **Approve Model & Aircraft Configuration** screen



Approve Part & Component Configuration

- On click of the "Approve Configuration(s)" pushbutton in the **Approve Part & Component Configuration** screen, if the process parameter 'Inherit Sequence of Position Code from Part to applicable Components?' is set as '1' and if "Inherit Changes to Component" checkbox is checked, then the Sequence # of the new position in Part is inherited to the corresponding applicable Components.
- On click of the "Approve Configuration(s)" pushbutton in the **Approve Part & Component Configuration** screen, if the process parameter 'Inherit Sequence of Position Code from Part to applicable Components?' is set as '0' and if "Inherit Changes to Component" checkbox is checked, then the system retains the existing behavior of inheriting the newly inserted position as the last in sequence for the corresponding applicable Components.

Exhibit 2: Identifies the **Approve Part & Component Configuration** screen



WHAT'S NEW IN COMPONENT MAINTENANCE PLANNING?

Ability to define the Repair or Not conditions for Part Based Rules

Reference: APRP-217

Background

In Parts pool management organization, normally the parts will be loaned to the customer for exchange of another unit, the parts received from the customer may or may not be in serviceable condition. Since the organization needs to keep its own inventory in sufficient level, the unserviceable unit may go to internal/external repair. In order to automate the process to execution order generation during the Customer exchange unserviceable unit receiving, the Repair Rules definition has been introduced. The 'Repair Automation Rules' will help the users to define certain rules based on its part attributes and automate the execution order generation through scheduler.

Change Details

- A new activity **Manage Repair Automation Rules** has been introduced in the **Component Maintenance Planning** business component under the Component Maintenance business process.
- Following process parameters have been added under the Entity Type 'Component Maint. Planning' and the Entity 'Manage Rep. Auto. Rules' in the **Define Process Entities** activity of **Common Master** business component.

Process Parameter: Parameter for part based rules identification?	
Parameter Value	**Impact during Part Based Rules Rule definition**
'0' for 'Part'	The Repair Automation Rules can be defined for Part # only for Part Based Rules
'1' for 'Part Type'	The Repair Automation Rules can be defined for Part Type only for Part Based Rules
'2' for 'Part Classification'	The Repair Automation Rules can be defined for Part Classification only for Part Based Rules
'3' for 'Part Category'	The Repair Automation Rules can be defined for Part Category only for Part Based Rules

Process Parameter: Sources applicable for 'Part Ownership - Internal' for Automatic Execution Order Generation Rules	
Parameter Value	**Impact during Part Based Rules Rule definition**
'0' for 'Adv. Exchange CGR'	The Part Source combo in Part Based Rules & Parameter Based Rules will load only the 'Customer Exchange Return'
'1' for 'Rental Receipt'	The Part Source combo in Part Based Rules & Parameter Based Rules will load only the 'Rental Receipt'

***Note:** The process parameter 'Sources applicable for 'Part Ownership - Internal' for Automatic Execution Order Generation Rules' is defined as '0' for 'Adv. Exchange CGR' and 1' for 'Rental Receipt', the part source combo will load both the values in the **Manage Repair Automation Rules** screen.*

Exhibit 1: Manage Repair Automation Rules – Part Based Rules tab

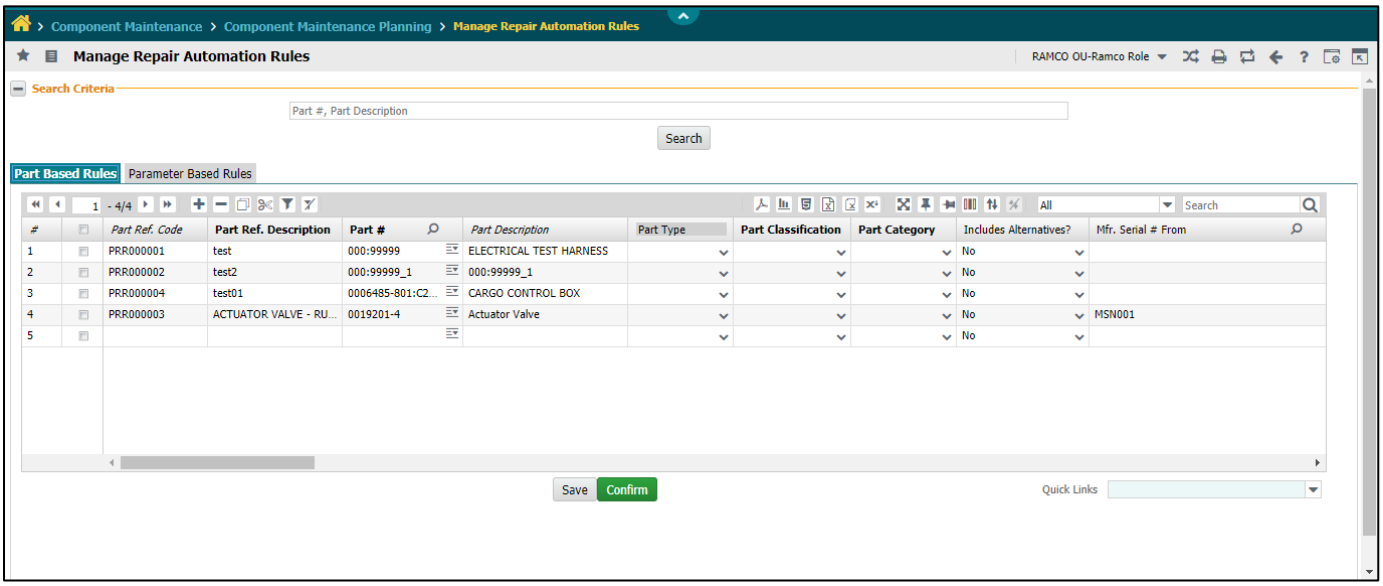
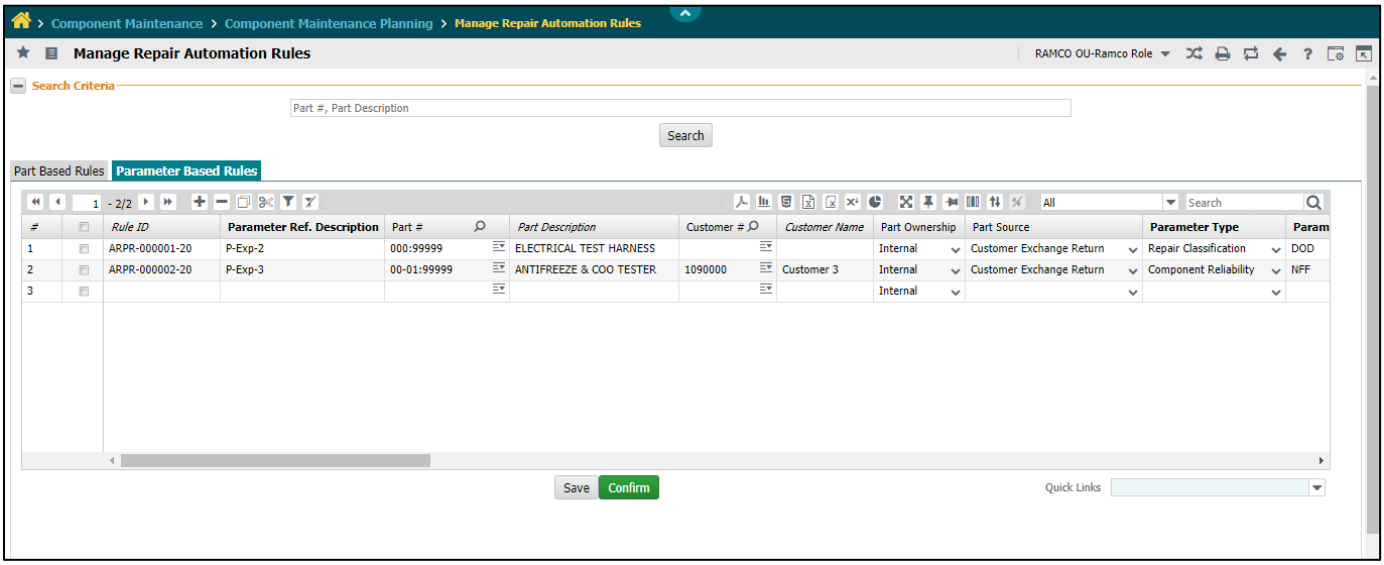


Exhibit 2: Manage Repair Automation Rules – Parameter Based Rules tab



Ability to Review Repair Rules of a Part

Reference: APRP-42

Background

Whenever a Customer exchanged part is received, the scheduler will execute the user defined 'Repair Rules' to generate automatic execution order. If the scheduler is failed to generate execution order, because of the explicit rules defined by the user or the rules match but the attributes defined against the rules are not satisfied with the receiving part, then the unserviceable part will be appear in the **Route Unserviceable Components/Parts** screen. There should be a provision to review the applicable repair rules in **Route Unserviceable Components/Parts** screen so that the users will take actions or overriding those rules by manually routing those parts to Internal/External repair.

Change Details

- Following columns have been added in the **Route Unserviceable Components/Parts** screen.
  - Auto Evaluation (Hyperlink)
  - User Status (Display Only)
  - Repair Order # - Display Only
- A new pop up ''Review Repair Rules' has been added in the **Route Unserviceable Components/Parts** screen. On click of 'Auto Evaluation Values', system will launch the 'Review Repair Rules' pop up
- Following process parameters have been introduced under the Entity Type 'Component Maint. Planning' and the Entity 'Manage Rep. Auto. Rules' in the **Define Process Entities** activity of **Common Master.**

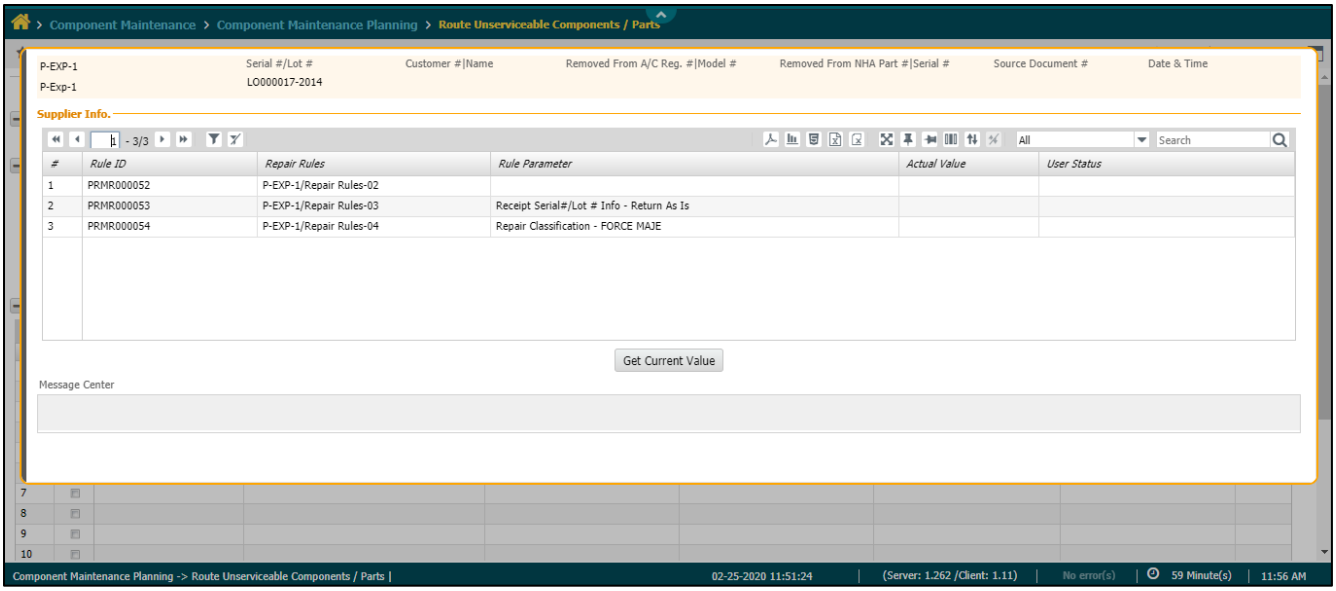
Process Parameter: Evaluation of Automatic Execution Order Generation Rules for Unserviceable Stock	
Parameter Value	**Impact during scheduler run**
'Enter '0' for 'Not Required'	The Repair Rules scheduler will not run
''1' for 'Required'	The Repair Rules scheduler should automatically run

- A new link 'Create Scrap Note' has been added in the **Route Unserviceable Components/Parts** screen to generate a scrap note for the parts.
- A new button 'Evaluate Vendor' to identify the 'Vendor' for the part based on the 'Vendor Identification Rules'

Note: If the Repair Rules scheduler has not been run for the parts, the Auto Evaluation? Column will not display any values. It will display the following values only if the Repair Rules scheduler has been run:

- ***Yes-With Failure** – System notes that the execution order is failed to generate automatically for a part*
- ***Yes-Part Not Issued**- System notes that the execution order is generated but the part is failed to automatically issued to the respective Repair Agency/Work Center.*

Exhibit 1: Review Repair Rules pop-up



WHAT'S NEW IN MAINTENANCE TASK?

Ability to define the user level security at Maint. Operator level to restrict modification of Task

Reference: APRP-726

Background

Currently, the **Maintenance Task** business component allows the users to modify the task irrespective of the Maint. Operator #. This enhancement allows users mapped to a specific Maint. Operator / AOCs (Air Operator Certificate) to modify the tasks specific to that AOC from Task Master screens. This way in a global organization consisting of multiple AOCs, users from one AOC can only view and work on tasks mapped to that AOC as opposed to all tasks in the system.

Change Details

To enable this functionality, the following new developments have been incorporated in the **Maintenance Task** business component

- New Combo Control – 'Maint. Operator #' has been added in the Select screen of **Edit Task and Maintain Activated Tasks.**
- New Combo Control – 'Maint. Operator #' has been added in the **Authorize Tasks** screen**.**
- A new process parameter "Allow retrieval/modification of tasks from other Maint. Operator codes in Task Master screens?' has been added in the **Define Process Entities** activity of the **Common Master** business component. Entity Type: Maintenance Task, Entity: Task, Permitted values: 0 (Not Allowed); 1 (Allowed).
- Maint. Operator # drop-down box lists values based on the above parameter. If it is set as "0" the Maint. Operator # combo should list only the active Maint. Operator codes linked to the login user through the Planner Group that he/she belongs, along with a blank value. If Login user is not mapped to any of the Active Planner Groups, then system will consider that the login user is not having access to any of the maintenance operators. If it is set as "1" the Maint. Operator # combo should load all the active Maint. Operator codes available in the system along with a blank value. Blank value would mean that the Maint. Operator # search should consider only all the values inside the same combo, irrespective of validating whether the login user is mapped to Maintenance Operator/Planner group.
- Based on the above process parameter, system will fetch/restrict modification of the tasks mapped to other Maint. Operator codes, from the Task Master screens (**Edit Task**, **Authorize Task**, **Maintain Activated Tasks**, **Manage Task Effectivity**, **Maintain Task Relationship** screens).

Process Parameter: Allow retrieval/modification of tasks from other Maint. Operator codes in Task Master screens?	
1 for Allowed	Allows retrieval/modification of the tasks from other Maint. Operator codes in Task Master
0 for Not Allowed	Does not allow retrieval/modification of tasks from other Maint. Operator codes in Task Master
Default: '1' Allowed	

Exhibit 1: Indicates the new control in **Select Task** screen of **Edit Task** activity

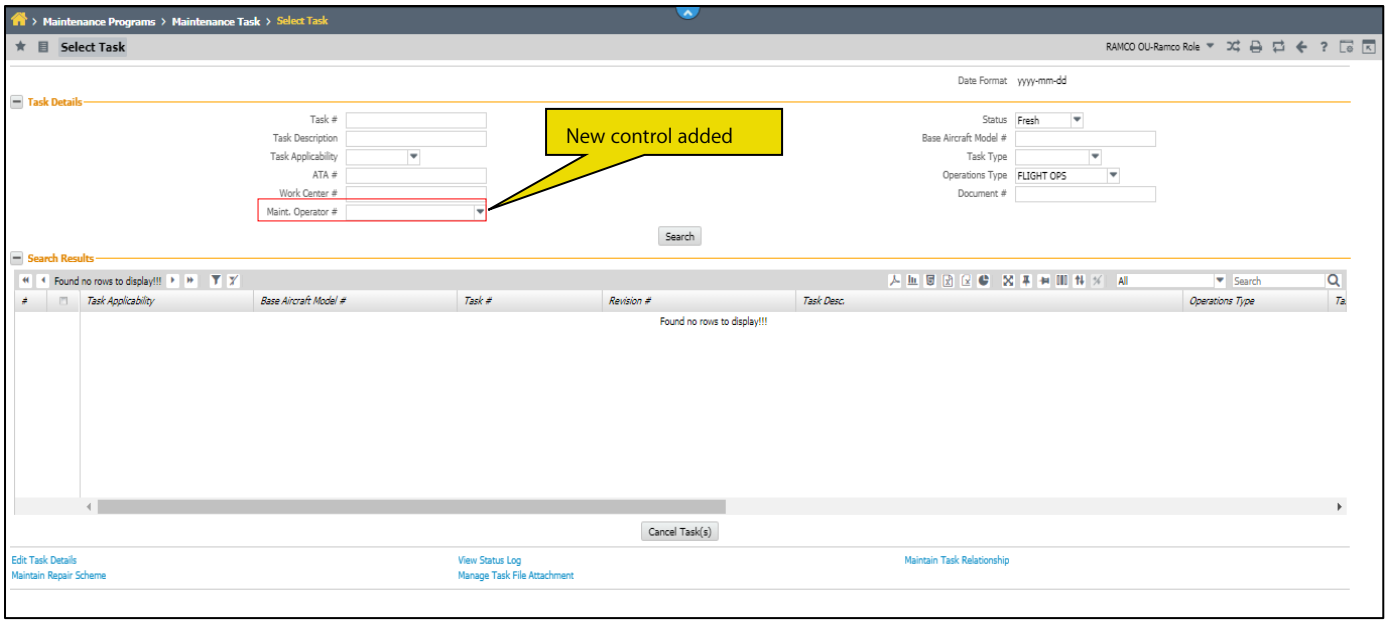
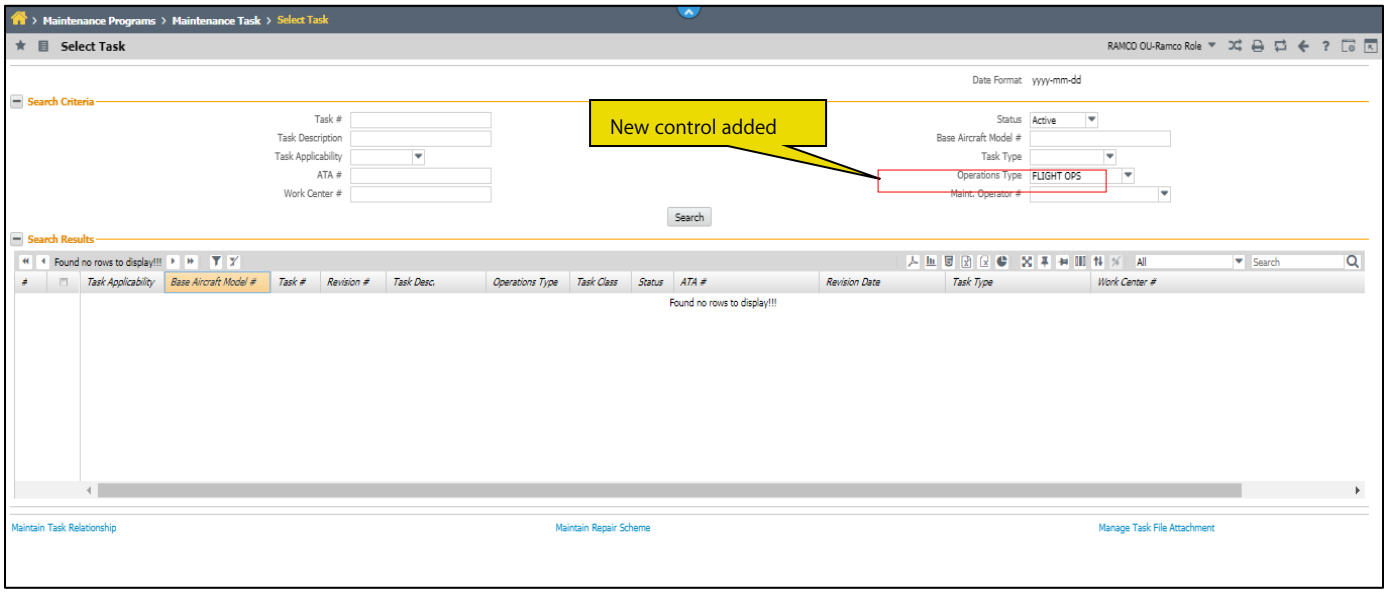


Exhibit 2: Indicates the new control in **Select Task** screen of **Maintain Activated Tasks** activity



Ability to update alternate part effectivity for repair scheme and to copy the repair scheme of child parts and its alternates in the child work order when it is removed from the higher assembly

Reference: APRP-156

Background

Part specific repair scheme for the main core parts and repair schemes of child parts of main core for different maintenance types are maintained in our ramco M&E system. When configuration is not maintained for the components (including its child assemblies) for which they do repair and overhaul services. Provision is required to update alternate part effectivity for repair scheme and to copy the repair scheme of child parts and its alternates in the child work order when it is removed from the higher assembly. Hence in this enhancement, provision to automatically create the child work order with child repair scheme task on removal of a part which could be an alternate of the child part's repair scheme is enabled. Also provision to copy the child part's repair scheme and its alternates to the respective child repair scheme task's effectivity list is supported.

Change Details

Maintenance Task

Manage Repair Scheme Definition

A new drop-down field 'Effective for Alternates' is added in the "Task Details" section of the **Maintain Repair Scheme** screen. The system lists the following drop-down values:

- 'Yes' – Indicates that the Repair scheme is applicable for the Parent part alternates.
- 'No' – Indicates that the Repair scheme is not applicable for the Parent part alternates.

Note: This field is enabled only if the 'Effectivity Control' field is set as "Specific".

A new drop-down field 'Effective for Alternates' is added in the "Repair Scheme Details" multiline of the **Maintain Repair Scheme** screen. The system lists the following drop-down values:

- 'Yes' – Indicates that the Repair scheme is applicable for the Child part alternates.
- 'No' – Indicates that the Repair scheme is not applicable for the Child part alternates.

Effectivity Copying Logic for Main Repair Scheme:

The effectivity list of the Repair Scheme Task is updated with this specific repair scheme Part # and its alternate Part # if the following conditions are satisfied:

- If the Repair scheme Task has effectivity control set as "Specific" and a specific Part # is entered, and 'Effective for Alternates' field is selected as 'Yes'.
- If the process parameter "Automatic update of Task-Part Effectivity based on Repair Scheme Definition" in the **Define Process Entities** activity of the **Common Master** business component is set as '1' (Yes).

Effectivity Copying Logic for Child Repair Scheme:

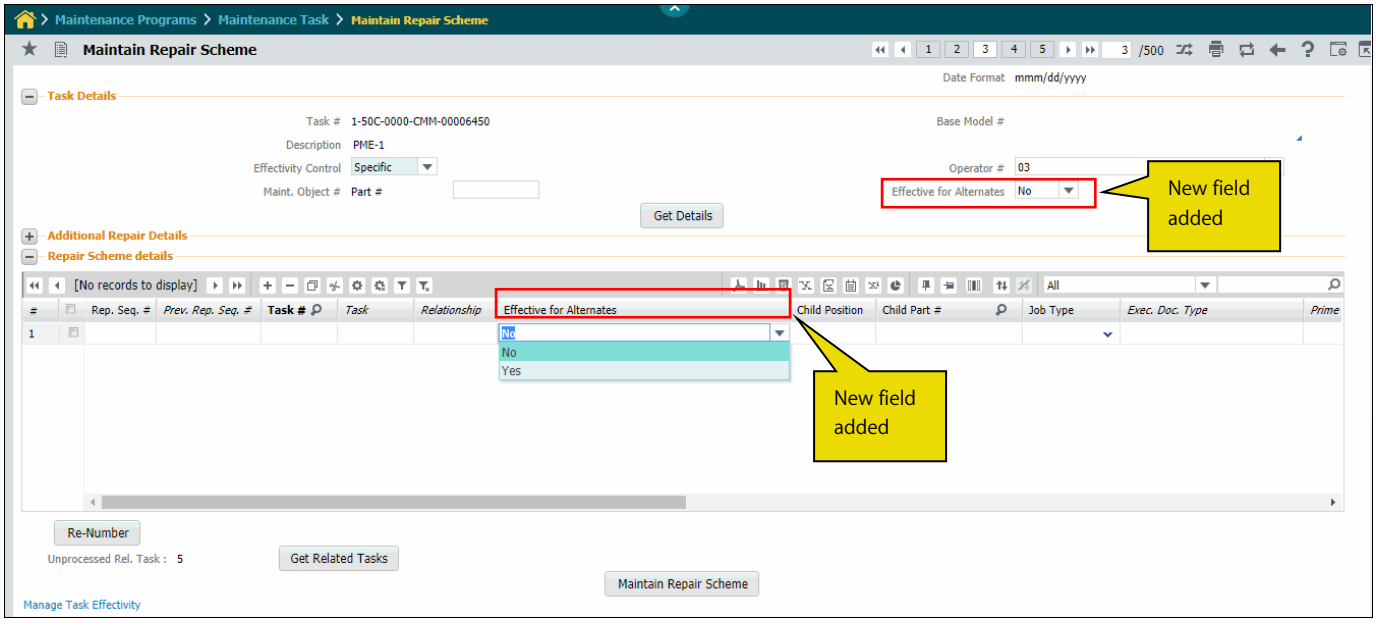
The effectivity list of the child Task is updated with this child Part # and its alternate Part # if the following

conditions are satisfied:

- If the Repair scheme Task has effectivity control set as "Specific" and a specific Part # is entered.
- If the process parameter "Automatic update of Task-Part Effectivity based on Repair Scheme Definition" in the **Define Process Entities** activity of the **Common Master** business component is set as '1' (Yes).
- If any Child Task exists against which Child Part # is defined and 'Effective for Alternates' field in multiline is selected as 'Yes'

Note: The Effectivity copying logic is applicable only for Component and Engine Tasks and not for Aircraft Tasks.

Exhibit 1: Identifies the **Maintain Repair Scheme Definition** screen



Shop Work Order

Record Shop Execution Details

On generating the child Work Order based on Disposition Code option (set as Yes), system adds the child Repair Scheme task along with its related tasks to the child work order from parent work order provided the child RS task is effective for the removed part and updates the Part # in the task details of child Work Order with the removed Part #, and the separation flag as 'Yes' for the rows to which the part # is updated if the following conditions are satisfied:

- Removed Part # is an exact part or its 'Alternate Part' to the 'Child Part' defined under the Repair Scheme of Parent part # in **Maintain Repair Scheme Definition** screen.
- If Effective for Alternates is set as 'Yes' against the Child Repair Scheme task in **Maintain Repair Scheme Definition** screen.

WHAT'S NEW IN MAINTENANCE PROGRAMS?

Ability to define multiple restoration tasks having different Maint. Operators for a single part

Reference: APRP-272

Background

Different AOCs (Air Operator Certificate) require different restoration tasks to be performed on the same part #. Hence a provision to define multiple restoration tasks for a single Part # is needed in our system. In this enhancement, ability to define multiple restoration tasks having different Maint. Operators for single part # are provided.

Change Details

Common Master

A new process parameter 'Allow multiple restoration tasks for the same part based on Maint. Operator Code?' is added under the Entity Type 'Maintenance Task' and Entity 'Task' in the **Set Process Parameters** screen of the **Define Process Entities** activity with the following permitted values:

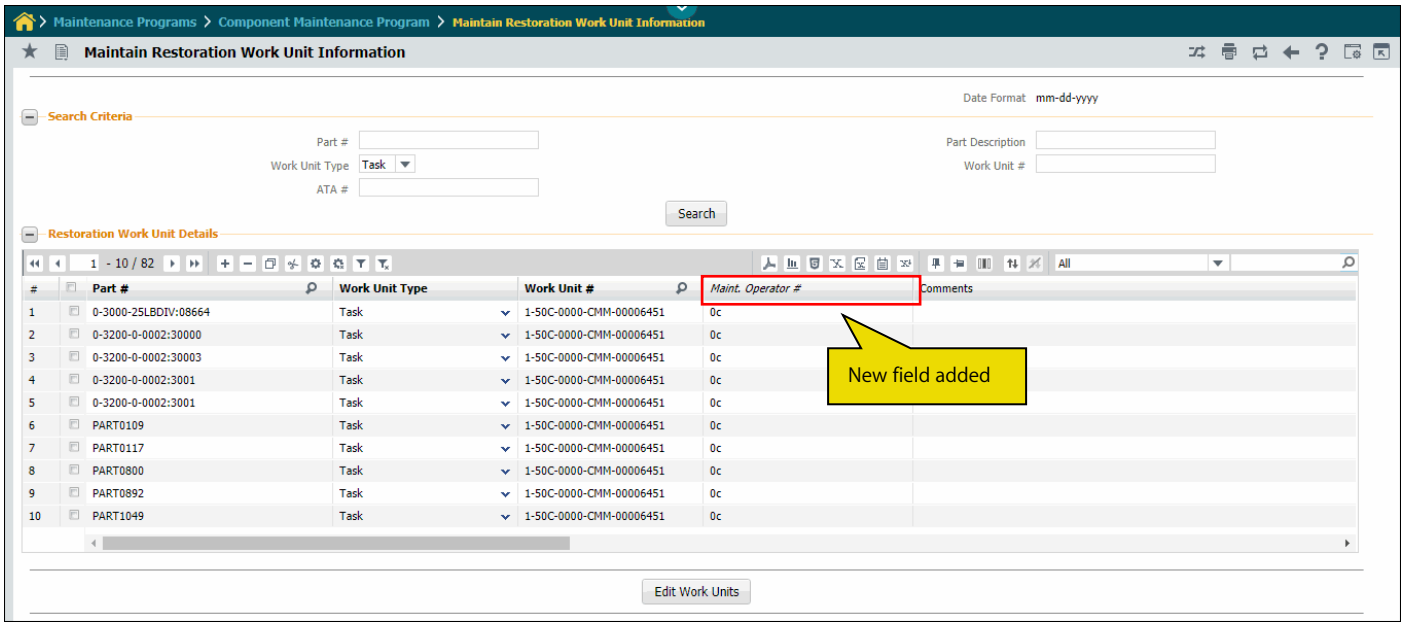
- 0 (Not Required) – System does not permit the definition of multiple restoration tasks for a same part # based on Maint. Operator Code.
- 1 (Required) – System permits the definition of multiple restoration tasks for same part # based on Maint. Operator Code.

Component Maintenance Program

A new display field 'Maint. Operator #' is added in the "Restoration Work Unit Details" multiline of the **Maintain Restoration Work Unit Information** screen.

If process parameter 'Allow multiple restoration tasks for the same part based on Maint. Operator Code?' is set as '1'(Required) and if multiple Work Units of Work Unit Type 'Task' with different Maint. Operator # is available for the same Part #, then the system saves the multiple tasks for the same part #.

Exhibit 1: Identifies the **Maintain Restoration Work Unit Information** screen

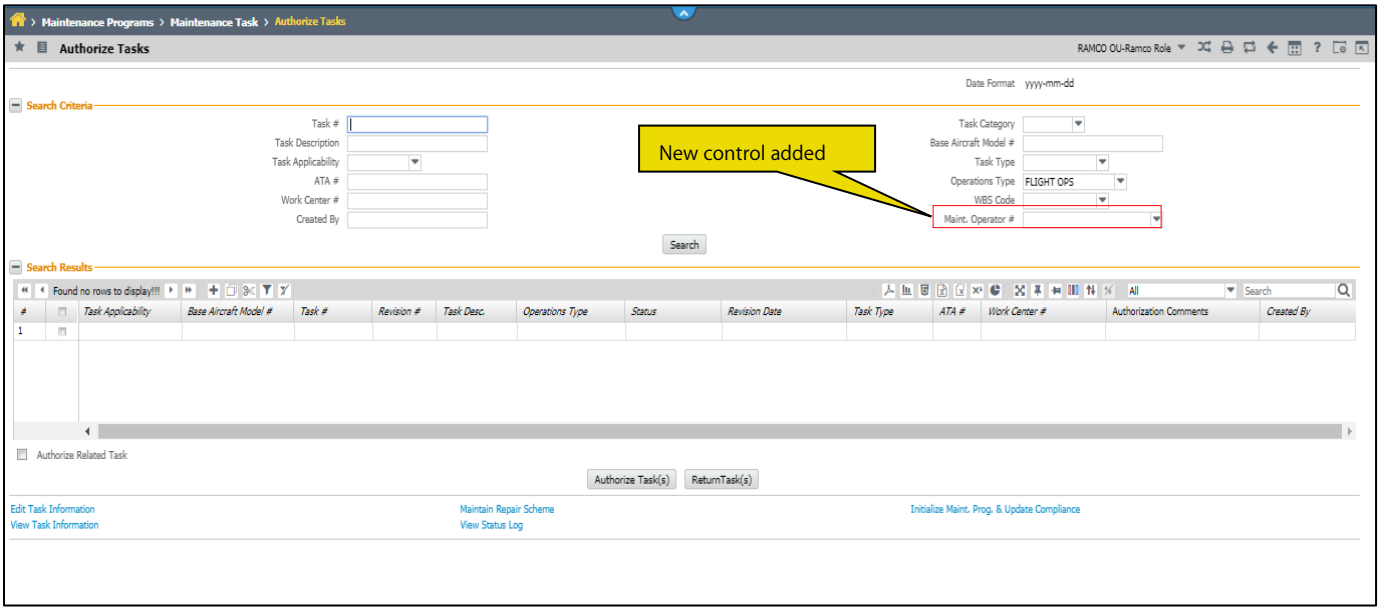


Maintenance Task

On click of the 'Update Effectivity' pushbutton in the **Manage Task Effectivity** screen, the system does not permit multiple Maint. Operator # effectivity definition for a single Task # of Task Applicability 'Component' or 'Engine' if the following conditions are satisfied:

- If the "Task #" and the "Maint. Operator #" values are provided with 'Effectivity Change' field set as 'Effective'.
- If process parameter 'Allow multiple restoration tasks for the same part based on Maint. Operator Code?' is set as '1'(Required).

Exhibit 3: Indicates the new control in **Authorize Tasks** screen



Validation upon multiple employees modifying the task schedule

Reference: APRP-755

Background

When two users work in parallel on the same Aircraft Program from two different screens i.e. in the 'Initialize Maint. Program & Update Compliance' screen and in the Program screens, the changes made in one screen is not reflected in the other screen until screen refresh takes place. After saving some changes in 1st screen, upon Save of the 2nd screen details, these changes are saved and the ones done by the 1st user are overwritten since the 2nd screen did not retrieve the saved changes from 1st screen due to this 2nd screen not being refreshed post changes in the 1st screen. Due to this, the 1st user has no clue of how this overwriting happened. Hence in this enhancement, a provision to notify the second user of the changes made in the program by some other user is developed.

Change Details

Maintenance Programs

A new validation message is included and it appears in the pop-up when user tries to modify the tasks within a Maintenance Program if the program has been modified by another user from the 'Initialize Maint. Program & Update Compliance' screen and vice versa. The validation message informs the user that tasks had been modified by some other user, and hence advise the user to refresh the screen to proceed ahead.

This new validation appears when users work in parallel in the following screen combinations:

Combination 1:

- Initialize Maint. Prog. & Update Compliance
- Edit Aircraft Specific Maintenance Program

Combination 2:

- Initialize Maint. Prog. & Update Compliance
- Maintain Component Maintenance Program

Combination 3:

- Initialize Maint. Prog. & Update Compliance
- Edit Aircraft Maint. Schedule Information

Combination 4:

- Initialize Maint. Prog. & Update Compliance
- Edit Schedule Date/Value

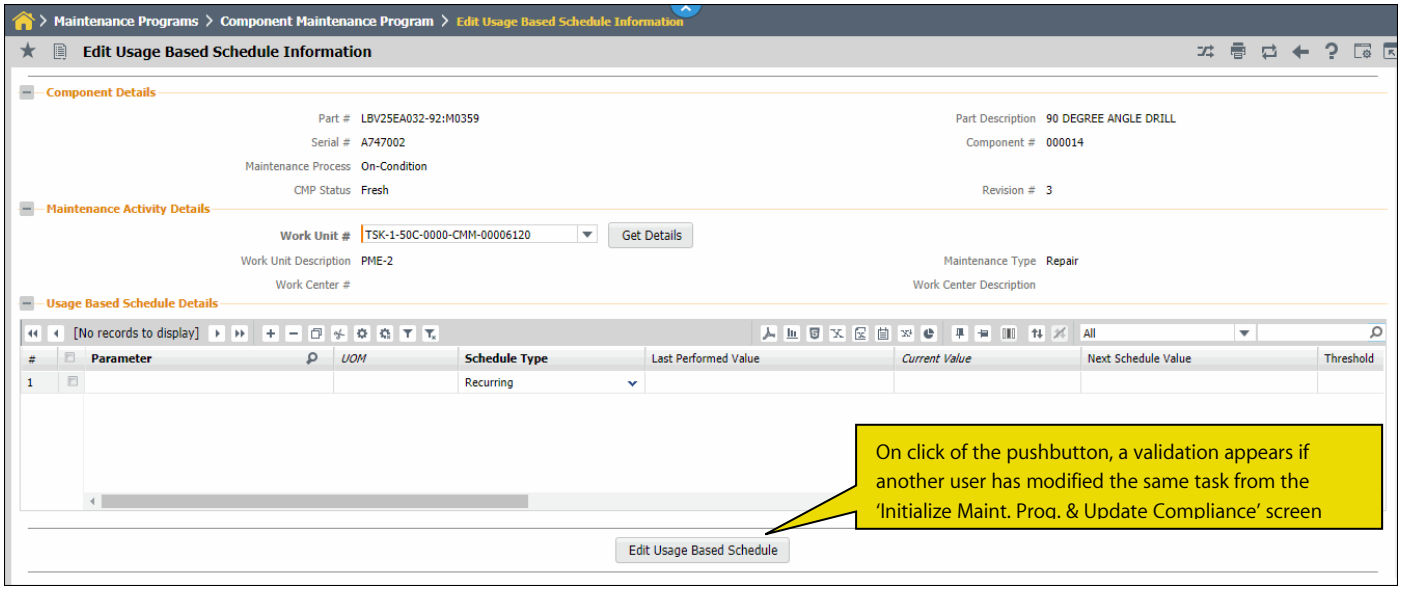
Combination 5:

- Initialize Maint. Prog. & Update Compliance
- Edit Date Based Schedule Information

Combination 6:

- Initialize Maint. Prog. & Update Compliance
- Edit Usage Based Schedule Information

Exhibit 1: Identifies the **Edit Usage Based Schedule Information** screen:



Ability to activate the schedule status of the Task in Program upon activation of the Task status in Task Master

Reference: APRP-753

Background

Currently, when a Task Status is changed as 'Inactive' in the Task master, system automatically updates the Schedule Status of the corresponding Task as 'Inactive' in Maintenance Programs. But when the Task Status is changed to 'Active', system does not automatically change the Schedule Status of the Task as 'Active' in Maintenance Programs. User is required to manually change the Schedule Status as 'Active' in Maintenance Programs. In this enhancement provision to activate the schedule status of the Task in Maintenance Program upon activation of the Task status in Task Master is developed. Hence, the need to revise the Maintenance Program to update Schedule Status is eliminated and it will save time because multiple programs need to be updated.

Change Details

Common Master

Define Process Entities

A process parameter "Auto update the Schedule Status of Task as 'Active' in Maintenance Programs when the Task Status is activated in the Task master?" is added under the Entity Type 'Maintenance Task' and Entity 'Task' with the following permitted values:

- '0'(No) – The schedule status of the task does not change automatically as 'active' in Maintenance Programs when the Task Status is activated in the Task master.
- '1'(Yes) – The schedule status of the task changes automatically as 'active' in Maintenance Programs when the Task Status is activated in the Task master.

Maintenance Program

On activating the Task Status in Task master, if the process parameter 'Auto update the Schedule Status of Task as 'Active' in Maintenance Programs when the Task Status is activated in the Task master?' is set as '1' the system will automatically activate the Schedule Status of the Task in the following screens:

- **Edit Aircraft Maintenance program** screen of the **Maintenance Task** business component.
- **Maintain Component Maintenance Program** screen of the **Maintenance Task** business component.

The Status of tasks can be modified only in **Maintain Activated Task** screen.

Note: In the following conditions, system will not automatically update the Schedule Status as 'Active' though the Task Status is changed as 'Active' in the Task master:

i. *If Schedules are not defined for the Task in Maintenance Programs for the Program Item Type: Base, Block and Non-block.*

ii. *Component Maintenance Programs will not be updated if the Component is Phased Out.*

iii. *Engineering Order Tasks.*

iv. *If the schedule status of the task changed manually to Inactive in either Maintenance Program or IMPUC screen, the system will not update the changes made in task master.*

Ability to auto adjust the Aircraft & Component Program based on Advanced Schedule adjustments

Reference: APRP-512

Background

There is a need to maintain schedules for the parts/components at Model - Operator level. A schedule for Parts / Components varies depending on the Operator to which the part is issued or the model to which it is being attached. So, there is a need to define / maintain schedules at Model - Operator level.

Change Details

Common Master

New process parameter 'Effect Maint. Sch. Adjustments during Customer Direct Issue' has been added under the Entity Type 'Component Maint. Planning' and Entity 'Next Due Comptn. Logic' in the **Set Process Parameters** screen of the **Define Process Entities** activity with the following permitted values:

- 0 (No) – System does not permit the effect of schedule adjustment during customer direct issue.
- 1 (Yes) – System permits the effect of schedule adjustment during customer direct issue.
- Default value: 0(No)

New process parameter 'Effect Maint. Sch. Adjustments during Customer Rental Issue' has been added under the Entity Type 'Component Maint. Planning' and Entity 'Next Due Comptn. Logic' in the **Set Process Parameters** screen of the **Define Process Entities** activity with the following permitted values:

- 0 (No) – System does not permit the effect of schedule adjustment during customer rental issue.
- 1 (Yes) – System permits the effect of schedule adjustment during customer rental issue.
- Default Value: 0(No)

Existing process parameter "Sch. Impact on Position Change" has been renamed as "Impact on Sch. Adj". It will be loaded with the existing values as listed below in the Set Option activity of Component Maintenance Program component:

- Retain Existing schedules (Default value)
- Reset to template schedules

Manage Schedule Adjustments for Components

To cater to this requirement, new activity and user interface named **Manage Schedule Adjustments for Components** under the **Component Maintenance Program** component has been developed. The **Part Details** section in the page will display the following details:

- Part # - for which schedules needs to be adjusted, with on enter facility. If Sch. Adj. is already defined for a part, on click of Enter for the part #, systems to auto retrieve the "Sch. Adj. At" combo with the appropriate value. The Part # must have the part program defined for it.
- Sch. Adj. At – The drop-down list box displays the following
  - Model
  - Position Based
  - Operator
  - Model :: Operator

- Operator :: Position Based

- For any part, the schedules can be adjusted at a one adjustment level only.

Schedule Adjustment Details: This multiline has fields to be defined for Part # to adjust the schedules. Once the schedule adjustment level is chosen for Part # then Date based and Usage based schedules can be defined for the part. If the schedule adjustment level is chosen as Model, the Aircraft Effectivity information can be defined for the part. The relevant screens are navigable from the multiline to define date based and usage based schedules and effectivity information.

Date based Schedule: By default, the Date based schedules to be displayed as BLANK. On save, the system will auto fetch "Not Defined" as a data hyperlink, which can be used to launch the existing **Edit Date Based Schedules** page of the **Maintain Position Based Schedules** activity. In Edit Date Based Schedules interface, a new display only field **Operator #** has added in the header in order to show the operator entered in the **Manage Schedule Adjustments for Components** user interface. If the option "Allow retrieval/modification of tasks from other Maint. Operator codes in Component Program screens" is set as "Not Allowed" the system will list only the tasks for which login user has access. Contrarily, the system will display all the tasks for schedule adjustments. Once Schedules are defined, the system will update the Date based schedules as DEFINED. If the date based schedules are not defined, "NOT DEFINED" will be displayed to the users.

Usage Based Schedule: By default, the Usage based schedules will be displayed as BLANK. On save, the system will auto fetch "Not Defined" as a data hyperlink that can be used to access the "Edit Usage Based Schedules" of Maintain Position Based Schedules activity. In the Edit Usage Based Schedules page, a new display only control "Operator #" has been added in the header in order to show the operator specified in the **Manage Schedule Adjustments for Components** page. If the option "Allow retrieval/modification of tasks from other Maint. Operator codes in Component Program screens" is set as "Not Allowed" the system will list only the tasks for which login user has access. On the contrary, the system will display all the tasks for schedule adjustments. Once schedules are defined, the system to update the Date based schedules as DEFINED. If the usage based schedules are not defined, "NOT DEFINED" will be displayed to the users.

Aircraft Effectivity: By Default on Save, display ALL. On click of ALL, the system will launch the **Define Aircraft Effectivity** page wherein position based schedules can be restricted for aircraft. If the **Edit Effectivity** button in the **Define Aircraft Effectivity** is clicked & Aircraft specific restrictions are done, the system will display the Aircraft Effectivity column as "RESTRICTED".

Inherit Changes to Attached Component: By default the 'Inherit Changes to Attached Components' checkbox should be in checked state. This field controls the Auto adjustment of the schedules of the components attached to aircraft based on the schedule adjustment definitions. If the schedule adjustment definition matches any of the attached components which are fitted to aircraft already, the system will auto update the schedules from the schedule adjustments to component program. However, the system will adjust schedules for the unattached components in the upcoming component attachment transactions.

Note: Auto Adjustment of schedules (Inherit Changes to Attached Components) will happen only for the ACTIVE schedule Adjustments.

Component Program Update for the matching records in Schedule adjustments: Based on the schedule adjustments definitions, the system will re-compute the next schedules for the tasks in components. Online Forecast will be invoked for the components already fitted to aircraft & for the unattached components on attachment to aircraft. The Pending Tray update will happen automatically & existing due list process flow will be carried out. Existing provisions to update program/schedules in IMPUC along with compliance will be retained.

For Removals, the system to act based on the option setting, "Impact on Sch. Adj. Change" in the Set Options activity of Component Maintenance Program component. If the above option is set as "Retain Existing Schedules", the system will retain the existing schedules for the Sch. adj. task in component program. If the above option is set as "Reset to Template Program", the system to reset the existing schedules for the Sch. adj. tasks in component program based on part program.

Exhibit 1: Identifies the **Manage Schedule Adjustments for Components** screen

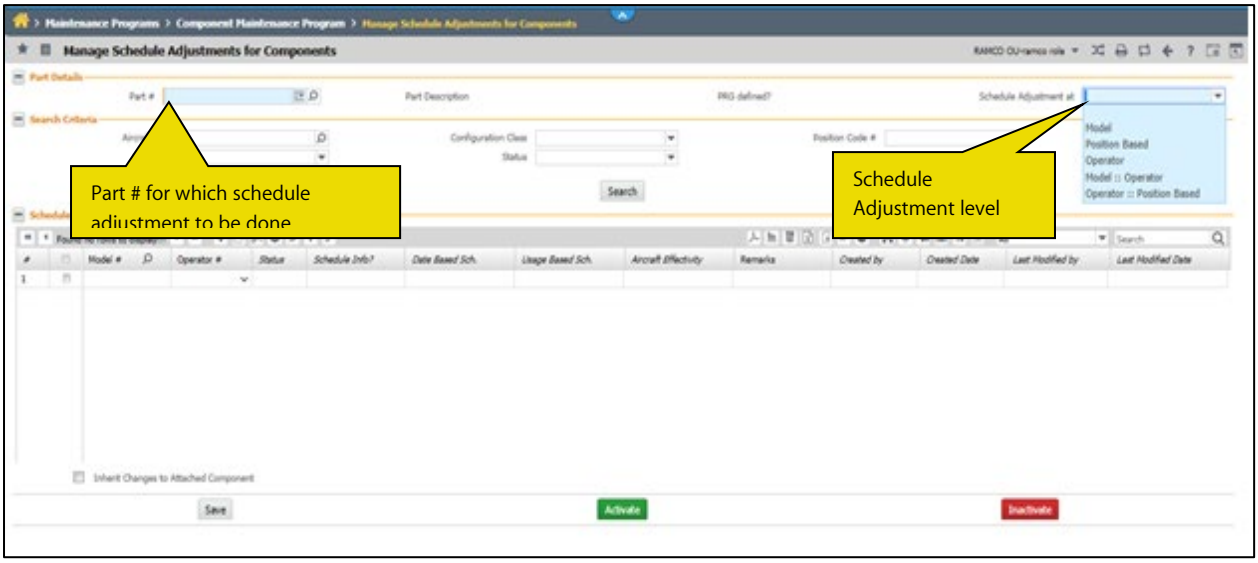
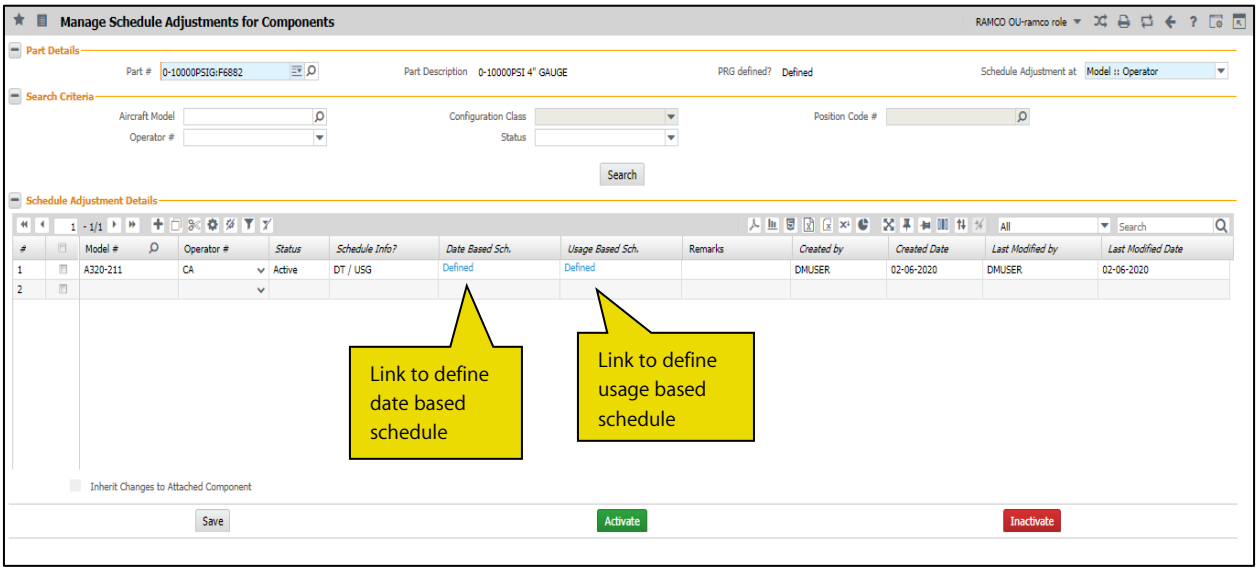


Exhibit 2: Identifies the **Manage Schedule Adjustments for Components** screen with links



WHAT'S NEW IN COMPONENT MAINTENANCE?

Ability to specify the Maint. Operator # for a Planner Group

Reference: APRP-268

Background

In order to provide data level security for the Customers, provision is required to map the planner group # with the Maint. Operator #. In this enhancement ability to specify the Maintenance Operator # for a planner group is provided. This limits the users associated to the planner group, have access to editing of Tasks mapped to the same Maint. Operator #.

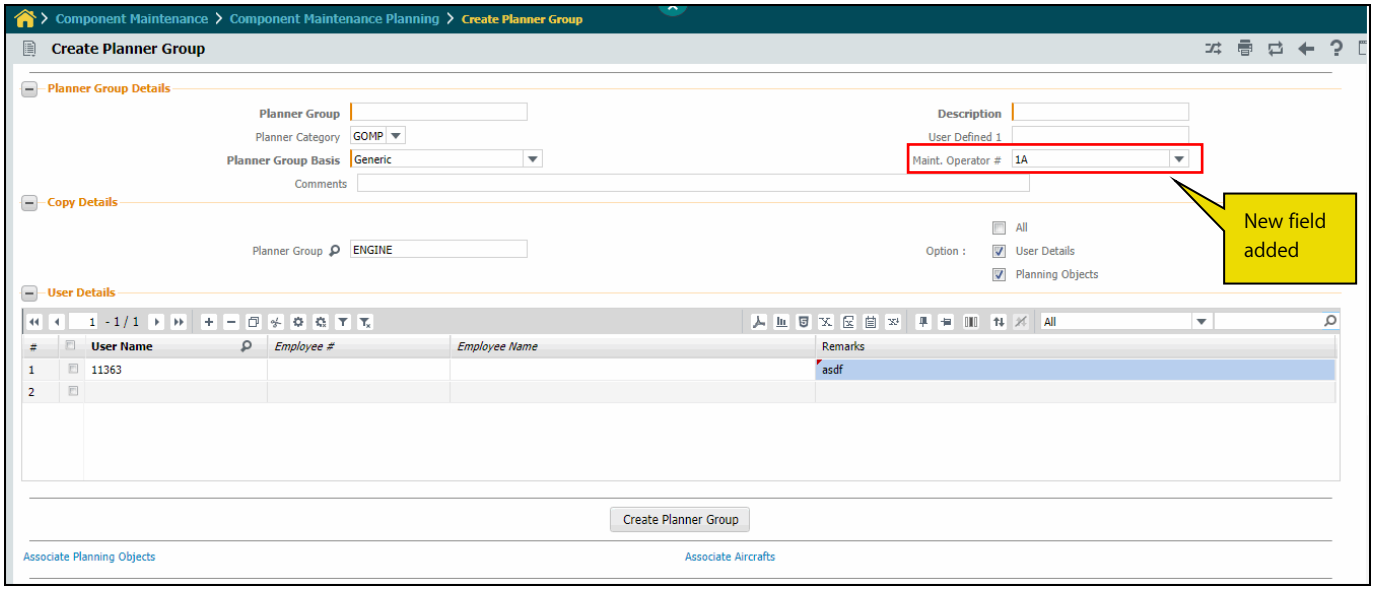
Change Details

Component Maintenance Planning

A new drop-down field "Maint. Operator #" is added in the 'Planner Group Details' section of the **Create Planner Group** and **Edit Planner Group** screens. This field lists all the 'active' Maint. Operators as defined in the **Create Airline Operator** screen of **Common Master** business component.

This field is added as a 'display-only' field in the **View Planner Group** screen. This field enables to map the Maintenance Operator to the planner group so that only the users associated to this planner group can have access to editing of Tasks mapped to the same Maint. Operator #.

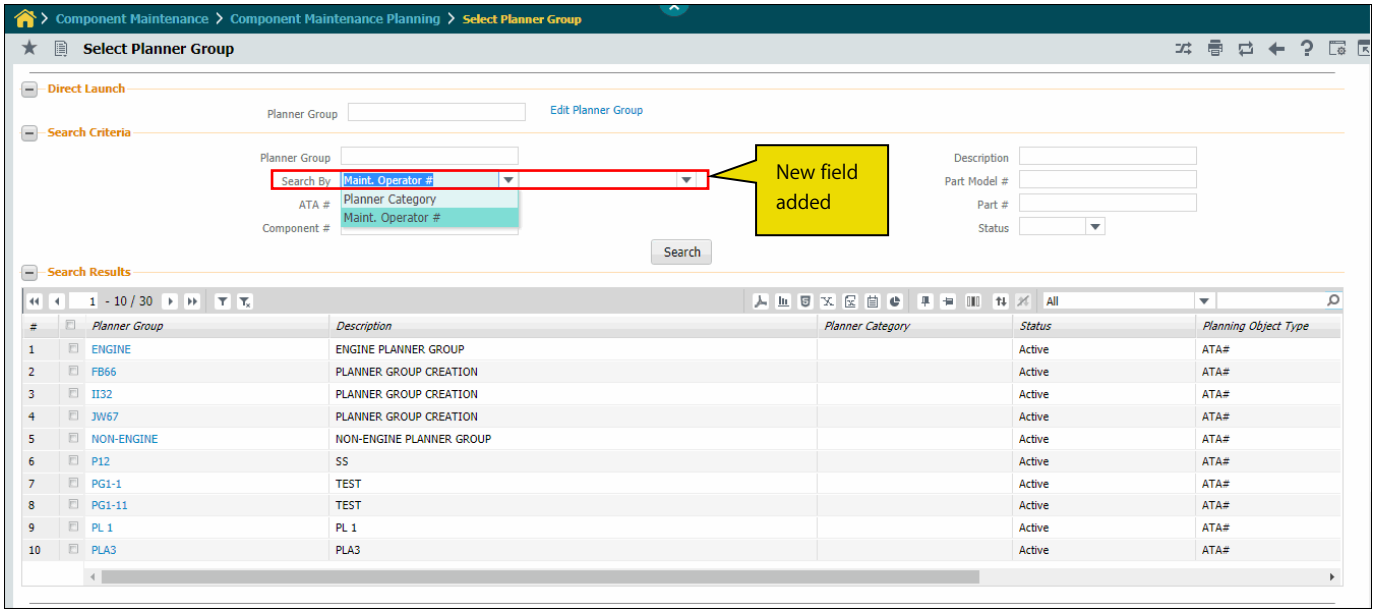
Exhibit 1: Identifies the **Create Planner Group** screen



A new drop-down field "Search By" is added in the 'Search Criteria' section of **Select Planner Group** screen of the **Edit Planner Group** and **View Planner Group** activities. The "Planner Category" field is replaced by the "Search By" field. This field lists the following values:

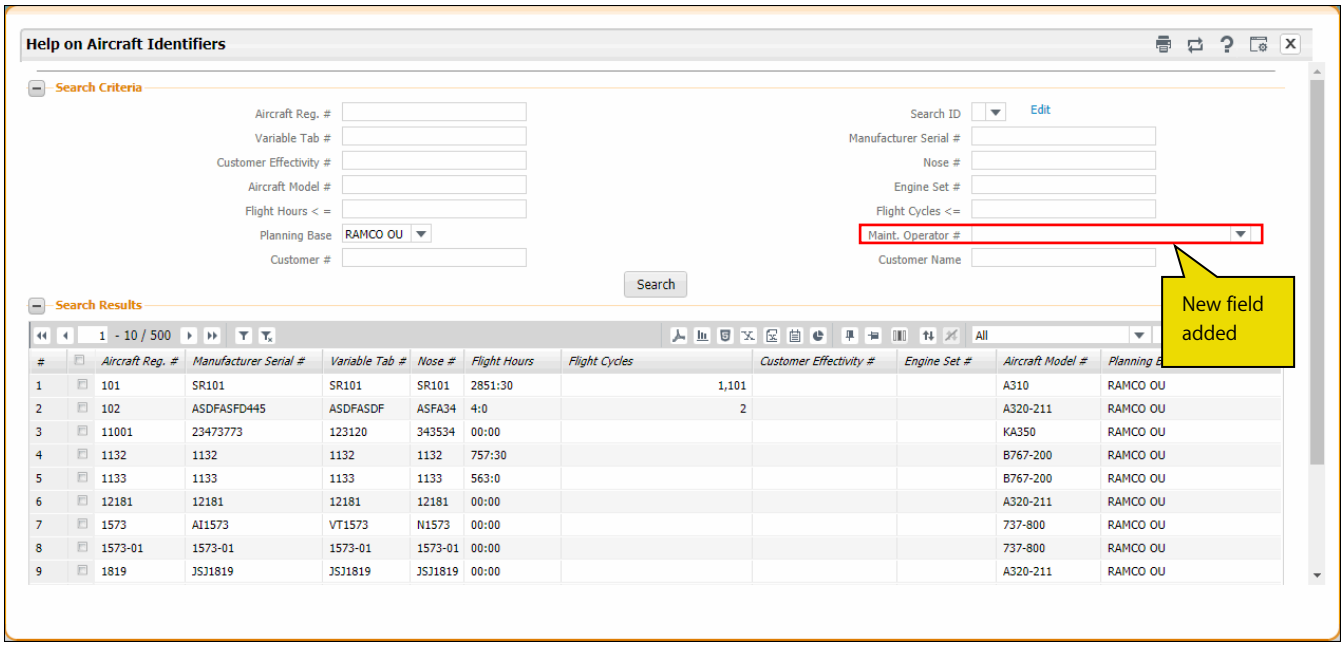
- Maint. Operator # - When 'Maint. Operator #' is selected, the second drop-down field lists all the 'active' Maint. Operators defined in the **Create Airline Operator** screen of **Common Master** business component.
- Planner Category – When 'Planner Category' is selected, the second drop-down field lists all the 'active' planner categories created in the **Create Quick Codes** screen of **Component Maintenance Planning** business component.

Exhibit 2: Identifies the **Select Planner Group** screen of the **Edit Planner Group** activity



A new drop-down field "Maint. Operator #" is added in the 'Search Criteria' section of **Help on Aircraft Identifiers** screen to facilitate retrieval of Aircrafts belonging to a specific Maint. Operator #. This field lists all the 'active' Maint. Operators as defined in the **Create Airline Operator** screen of **Common Master** business component.

Exhibit 3: Identifies the **Help on Aircraft Identifiers** screen



WHAT'S NEW IN COMPONENT REMOVAL?

Ability to auto update the Line Status of Tasks in Short Term Escalation as "Cancelled" upon removal

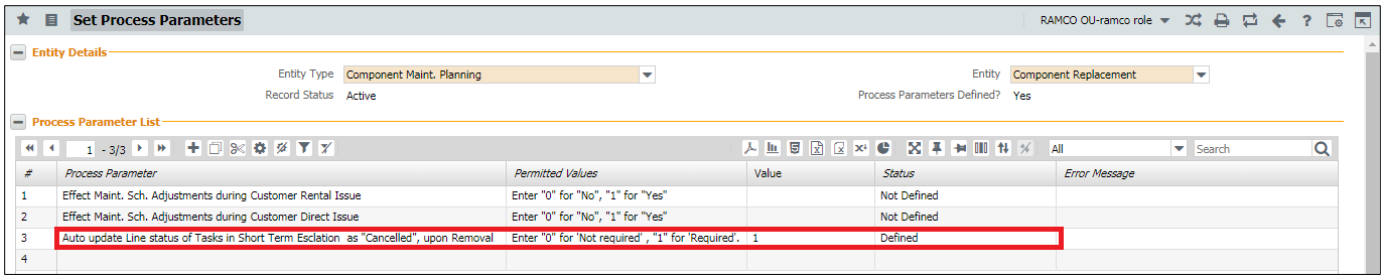
APRP-711

Background

Short term escalations are typically extensions in delay a set of job/tasks which could be due for an aircraft/component. But when a component for which STE has been approved is removed from an Aircraft for maintenance, the due/alert tasks can typically be performed without any need for extension. In such scenario, the STE which is already approved would be obsolete and ideally would need to be closed/cancelled.

Change Details

This enhancement allows users to update the Line level status of Tasks in Short Term Escalation as "Cancelled" upon removal of applicable component from the Aircraft prior to its escalated due date. This can be achieved by setting up the parameter "**Auto update the Line status of Tasks in Short Term Escalation as "Cancelled" upon removal**" under the Entity Type, 'Component Maint.' & Planning of Entity 'Component Replacement'. When user sets the parameter as **Required** then system will update the Line status as Cancelled on removal of applicable component from an aircraft prior to the escalated due date and if it is **Not Required** system will follow the existing behavior.



This feature can be categorized as given below:

1. **Removal Date & Time is earlier than the STE Approved Date & Time:** On recording a backdated removal, the corresponding "Line Status" in STE will be updated as "Cancelled" and/or the Status of STE documents will be updated as "Cancelled", provided the tasks are already not complied and the schedules will be reset back to original schedules.
2. **Removal Date & Time is earlier than the STE Approved Date & Time & component removal is reversed:** On reversal of a back dated removal, the STE which was cancelled during removal will be activated again and the scheduled with be reset with the escalated limits once again.
3. **Removal Date & Time later than STE Approved Date & time:** On recording a removal, as long as there is no compliance of tasks recorded, the STE will still be updated with Cancelled status and the component schedules will be reset back to original schedules.

Upon Removal, system will check the above set option and updates the schedules to the values which were prior to the escalation, based on the set option. Remaining units would be 10 FH & 5 FC.

Note: *Above check should be happening only if, the line status is "Pending".*

Below are the impacted columns in program,

1. NSV
2. NSD
3. Next Due Calc. On
4. Calc. Ref. Date / Value
5. Last Schedule Date / Value
6. Remaining Value
7. Short Term Esc. Ref #

The impacted screens are Update Aircraft Configuration, Tech. Records Hub, Initialize & Update Component Configuration, Work Reporting Hub, AME, Parts Hub, etc.

WHAT'S NEW IN AIRCRAFT EXECUTION HUB, FLIGHT LOG AND SHOP WORK ORDER?

Ability to maintain Sign Off History for AME & SWO in Desktop and MechanicAnywhere and show Action in History

Reference: APRP-202

Background

Aviation being a stringent industry requires recording / maintaining history of all vital activities performed on aircraft. Currently in Ramco Aviation, the users can perform Sign Off/ Void/ Reject/ Reversal of sign off based on the sign requirements pre-set for the task. However, a log that supports recording of these vital actions is not available in the product. Therefore, a provision for the maintenance of a log for all the sign off/void/ reject/reversal/ actions performed on a task/discrepancy in a package/work order is required for supervisors to review operational efficiency. Further, the log can be used for future reference as well.

Change Details

In order to maintain a complete log of all the sign off actions performed by a user for both AME Packages and Shop Work Order, the following enhancements have been developed:-

- Sign off/Void/Reject/Reversal performed for a particular task/discrepancy will be captured from both **Ramco Aviation Desktop** and **MechanicAnywhere**.
- A new popup **View Sign Off History** introduced wherein users can see a sign off log for task/discrepancy both at task level and subtask level.
- A new link **View Sign Off History** added in **Work Reporting Hub** screen under Quick Links for both task and discrepancy tabs.
- A new link **View Sign Off History** added in **View Work & Sign-off Information** screen near View Comments Information.
- A new link **View Sign Off History** added in **View Work Order Details** screen.

The **View Sign Off History** popup lists all the sign off actions performed against a task/discrepancy in a package/ shop work order in the hierarchical order of the sign off actions with task being the main node and subtask being the sub-node. It also shows previous and subsequent changes in the sign off status upon user action.

Exhibit 1: View Sign Off History popup

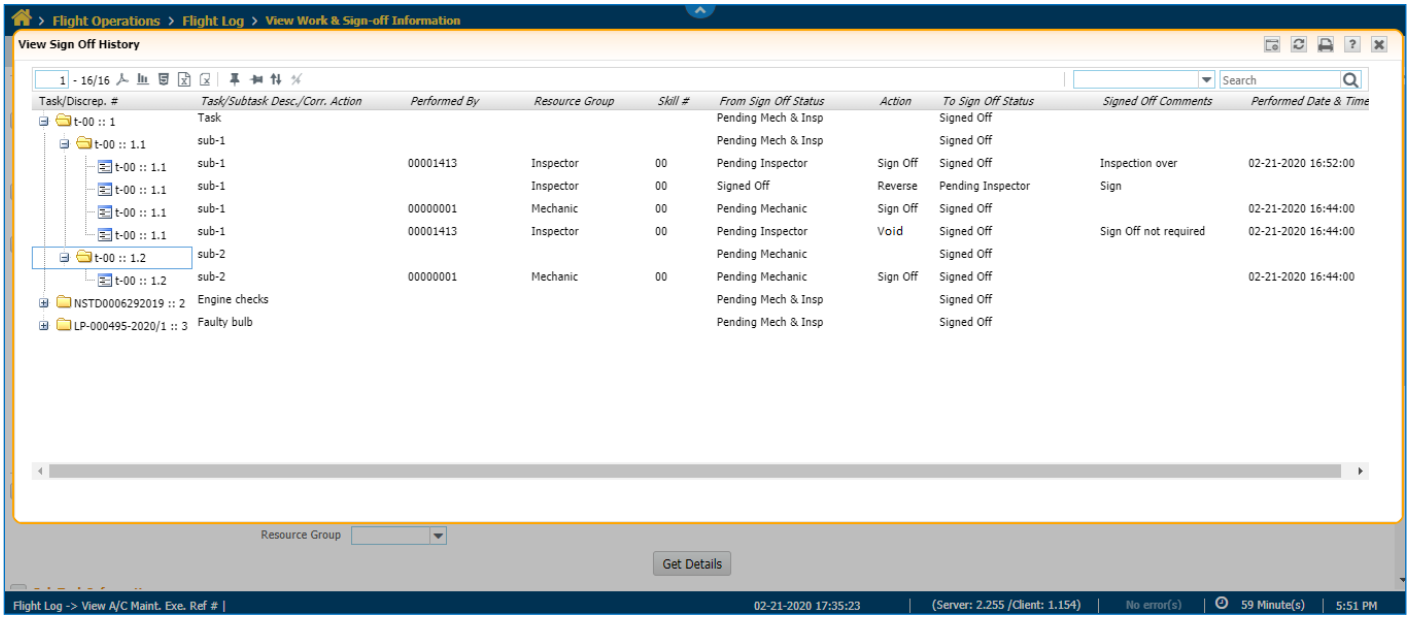


Exhibit 2: View Sign Off History link in **Work Reporting Hub** screen

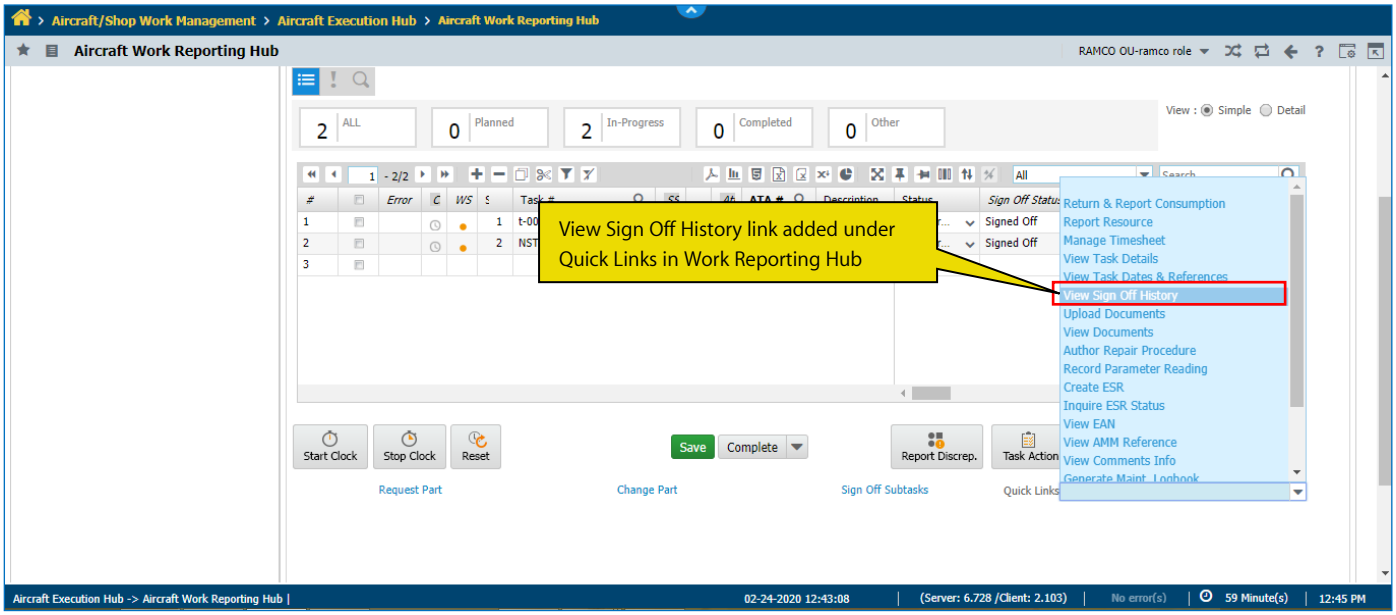


Exhibit 3: View Sign Off History link in **View Work & Sign-off Information** screen

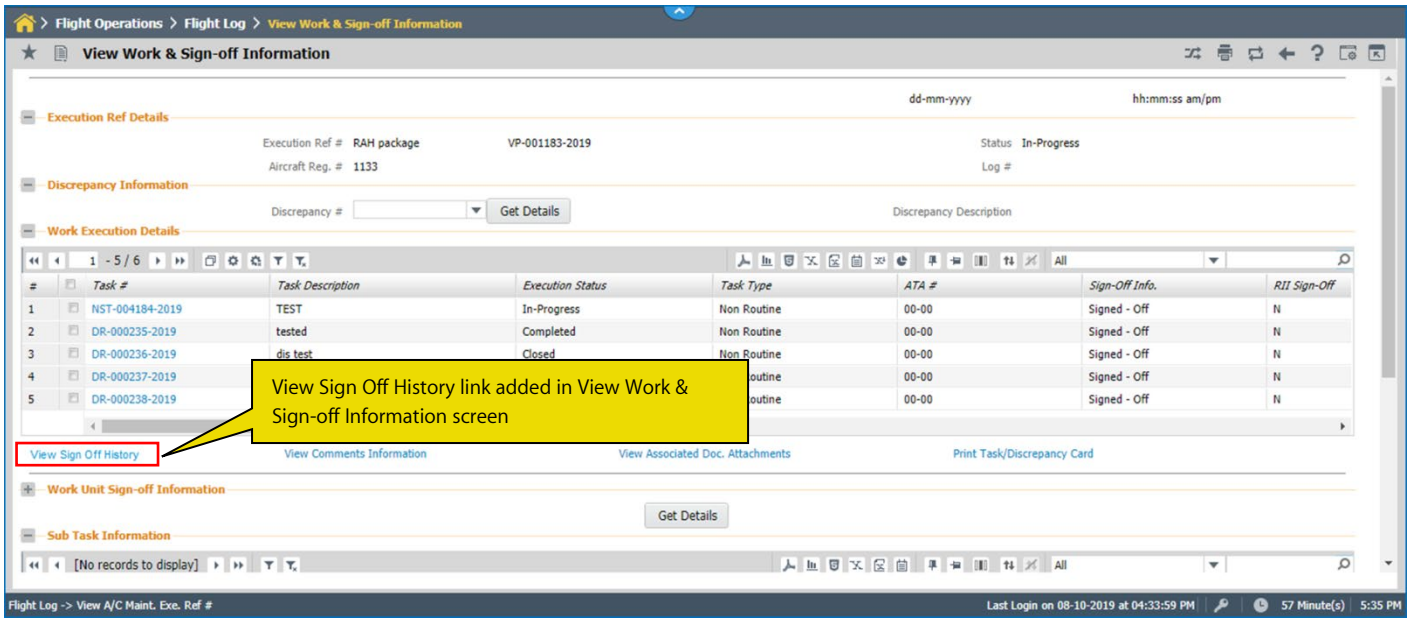
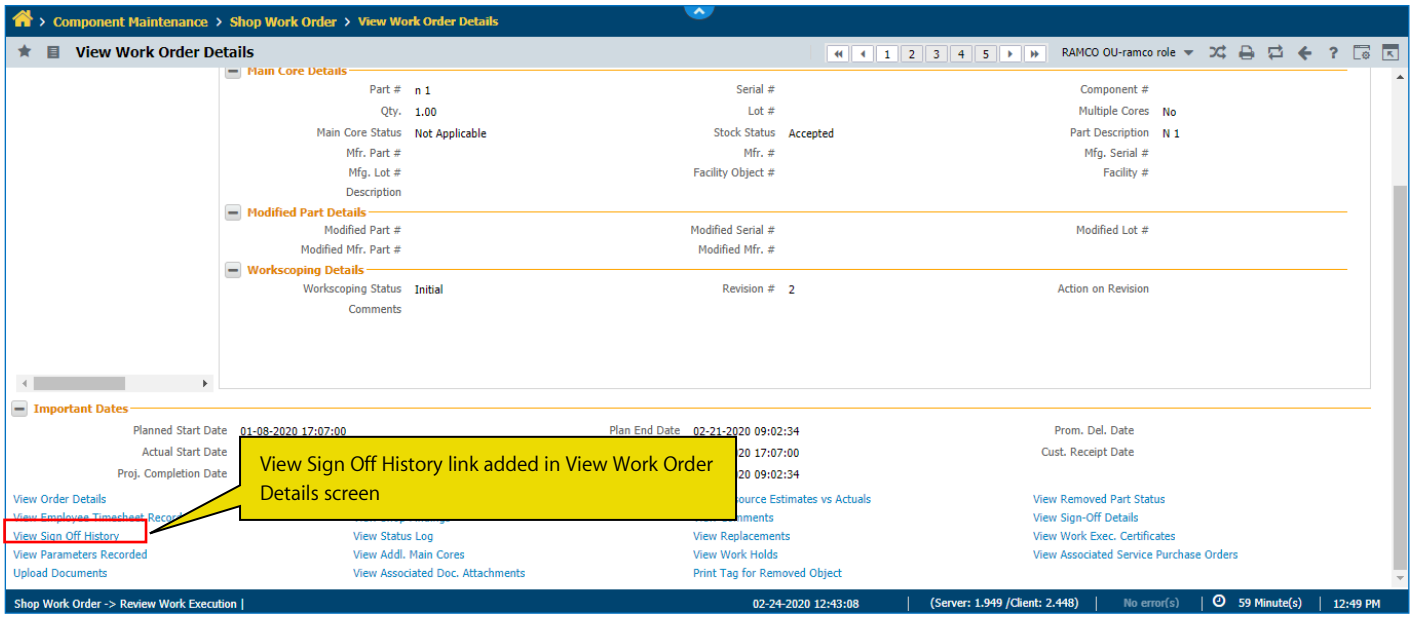


Exhibit 4: View Sign Off History link in **View Work Order Details** screen



WHAT'S NEW IN AME HUB?

Ability to report Discrepancy against a specific Work Center in AME Hub

Reference: APRP-152

Background

In certain MRO organizations, the discrepancies including Structural Inspection or NDT inspection are executed by the aircraft maintenance engineers in work centers associated with them and not in the work center to which the package has been assigned. Hence, it is required that the mechanics be given an opportunity to specify the work center at the time of reporting the discrepancy. This automatically enables the generation of material requests against the work center specified for the discrepancy instead of the package work center leading to seamless supply of parts to the work center.

Change Details

To enable the mechanics to specify the work center for a reported discrepancy, the following changes have been incorporated in the **AME Hub** screens:

- New field – **Work Center #** has been added in the following screens to enable the users to specify the work center for the discrepancy:
    - Multiline of the **Discrepancy** tab of the **Work Reporting Hub** page
    - **Manage Discrepancy** popup of the **Work Reporting Hub** page
- The **Work Center #** drop-down list box will display all the Active work centers for which the login user has access privileges.
- In the **Create Mode** of the screen, the work center for the Source Task / Discrepancy work center # is displayed in the **Work Center #** field by default. However, if the Source Task #/ Discrepancy # is not specified for the discrepancy, the work center # for the package is defaulted in the field.
- The system will now allow the users to modify the work center # for a discrepancy in the Edit Mode. However, change in Work Center # is possible only under the following conditions:
    - Any material request in the Authorized status and the related Issue in the Fresh status against the discrepancy
- The work center # cannot be changed, if one or more material requests for a task / discrepancy are available in the **Partially Issued** or **Closed** status
- If the new work center # specified by the user is attached to the same Serv. Request Warehouse # as the previous work center #, the system updates the work center # in the material request.
- However, if the new work center # is associated with Serv. Request Warehouse # that is different from that of the previous work center #, the system generates a new material request and stamps the old material request # in the new material request under the following condition:

- The process parameter 'Auto-Short closes the Open material requests that have Planning Documents on Work Center Change of Tasks & Discrepancies?' is set as '0' for 'Not Required'

Exhibit 1: Identifies the changes in the **Discrepancy** tab of **Work Reporting Hub**

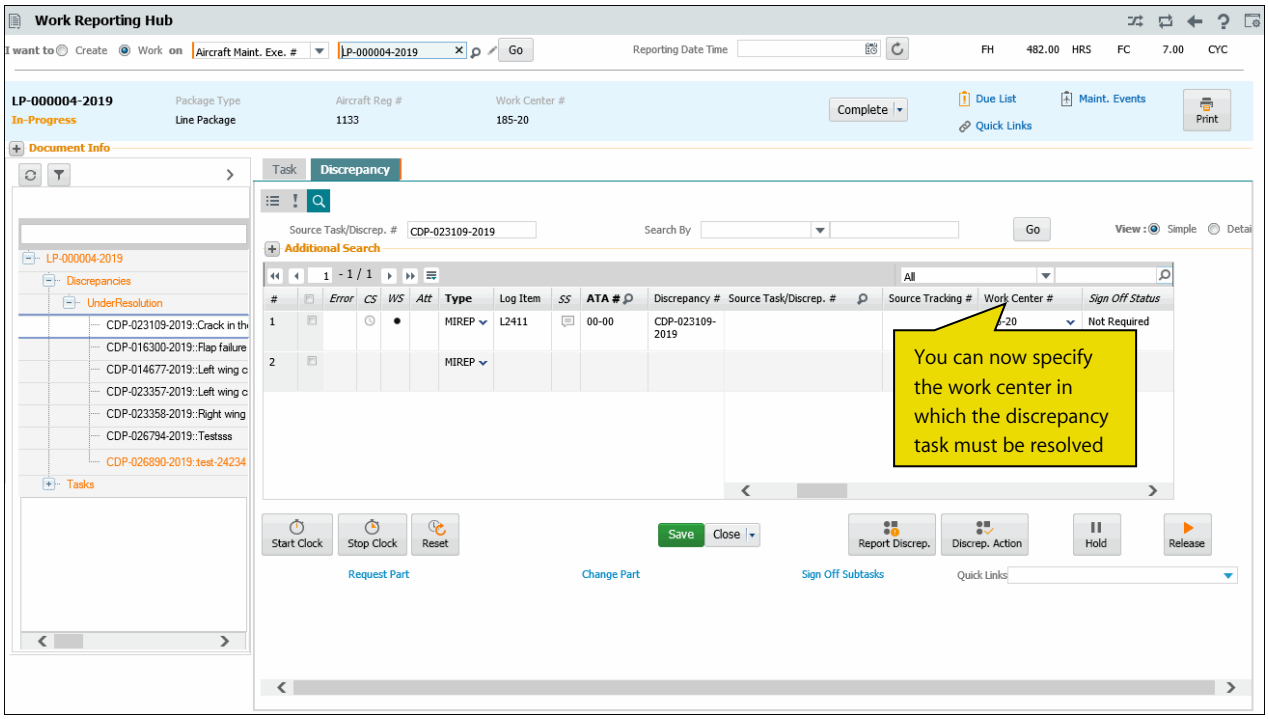
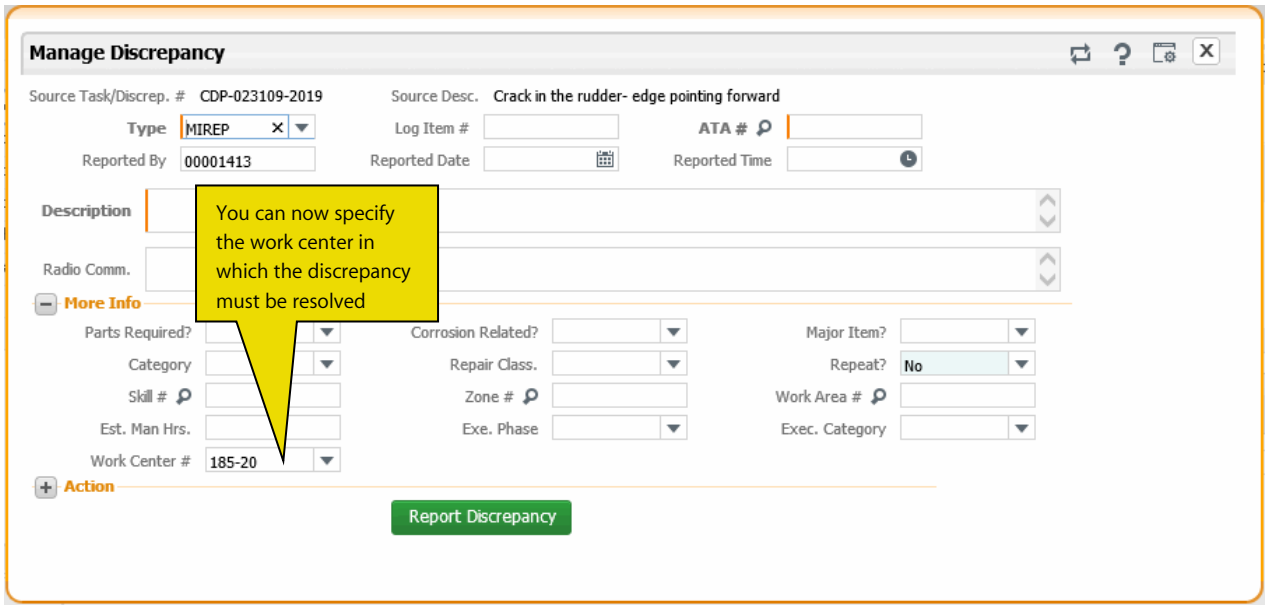


Exhibit 2: Identifies the changes in the **Manage Discrepancy** popup of **Work Reporting Hub**



Ability to set Task/Discrepancy as Source Task/Discrep. for non-routines and show them as hierarchy in the tree

Reference: APRP-257

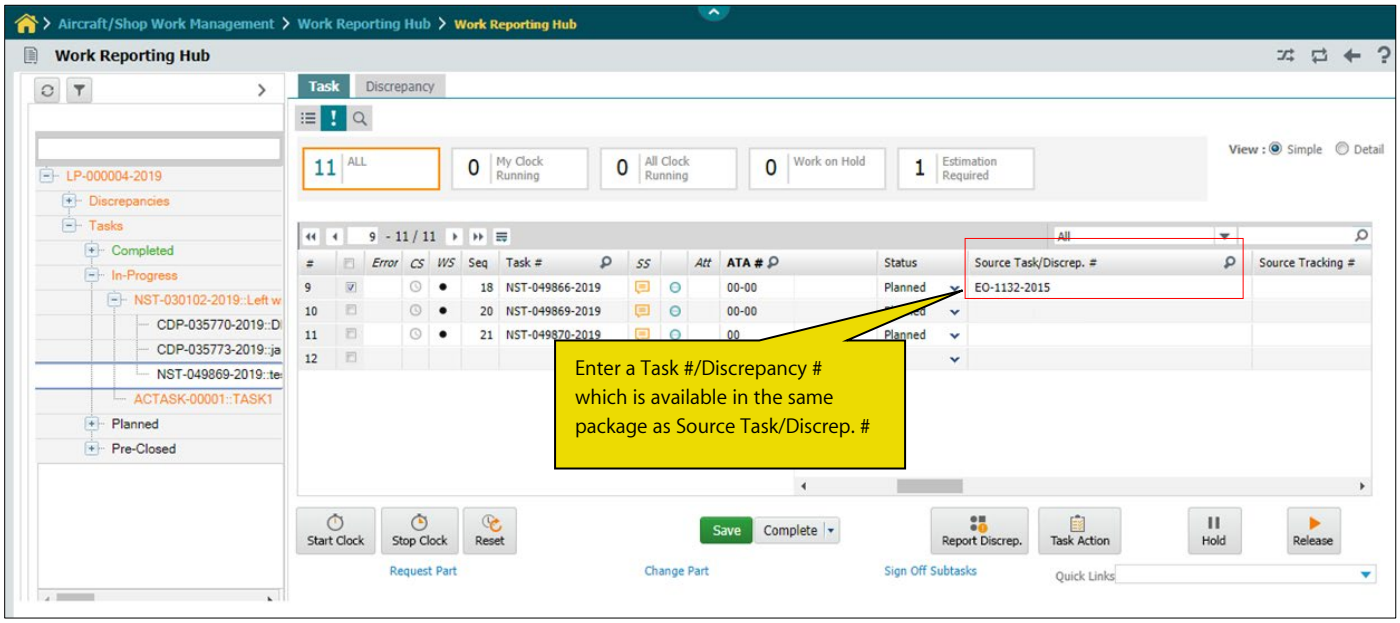
Background

At times during hangar execution, mechanics may need steps to perform a Standard Task. These steps are **reported against different Non-**standard Tasks. These added Non-standard tasks may be linked to the Standard Tasks for reference purposes. This enhancement brings a provision to map the Source Task/Discrepancy # for the already created Non-Standard Task and load the same as per hierarchy wise in the tree.

Change Details

- A task/discrepancy can be defined as a Source Task/Discrepancy # for a task as long it is available in the current package.
- User can map Source Task/Discrepancy # for Non-Standard Task or Discrepancy by entering the Task # or Discrepancy # in Source Task/Discrep.# column available in the multiline of Work Reporting Hub screen respective Task or Discrepancy and clicking the 'Save' button.
- A set option is provided for the user to choose whether the Source Task/Discrepancy # is mandatory or not while creating Non-Standard Tasks.

Exhibit 1: Identify the **Work Reporting Hub** screen where user can map Source Task/ Discrepancy # for a Non-Standard Task



WHAT'S NEW IN AIRCRAFT MAINTENANCE PLANNING?

Ability to Inherit Task Revisions to AME Package by the Planner

Reference: APRP-743

Background

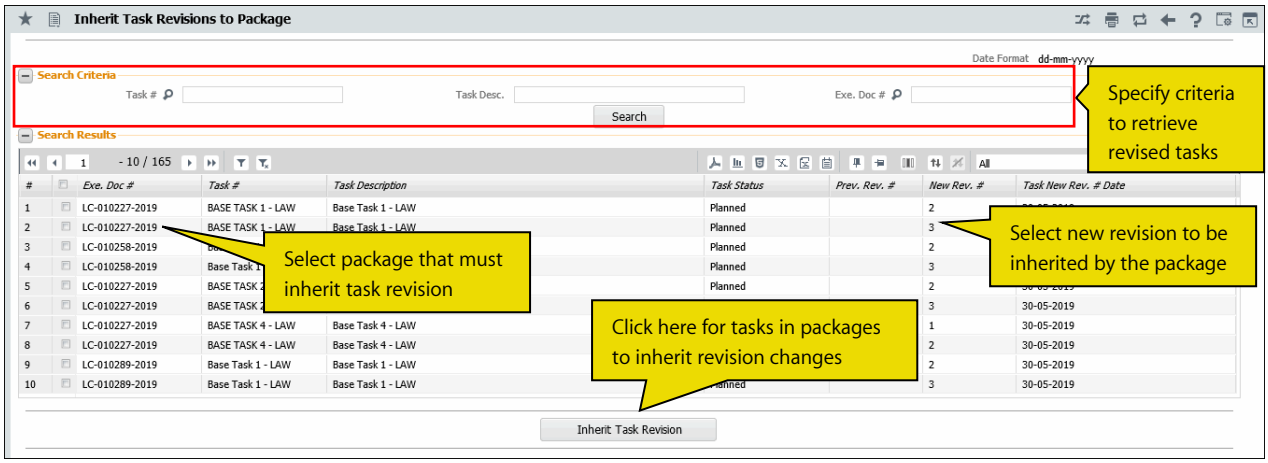
In Ramco Aviation, the maintenance planners assign tasks to work packages for execution on aircraft. Normally, the latest Active revision of the task is automatically assigned to the package. However, the tasks can be updated and revised based on engineering orders or other notifications at any point of time. Currently, when tasks already assigned to packages are revised, the revision changes are not automatically carried forward to these packages. The maintenance planners are required to manually look for the existence of the revised tasks in packages and then update the task revision change in each of these packages. This exercise proves to be tedious and time consuming. Hence an automatic mechanism wherein the task revision changes are inherited by packages that have been assigned the previous revision of tasks is required in the system.

Change Details

In order to ensure that the packages inherit the latest task revision changes, the following new developments have been built in the system:

- New activity - **Inherit Task Revisions to Package** has been introduced in the **Aircraft Maintenance Planning** business component. The activity helps the users to identify the packages that have previous revisions of the tasks. The users then can select the revision of the task that must be updated in the execution document.
- The **Inherit Task Revisions to Package** activity enables the users to search and find tasks that have been revised **since** they were assigned to packages by means of a search facility. The search facility includes **Task #, Task Description** and **Execution Document #**.
- The search retrieves the tasks in the Draft/Fresh/Planned/In progress status from the AME packages whose **Package Assigned Date** is equal to or earlier than **New Revision Date** of later revisions. For instance, if a task has been revised multiple times since it was assigned to packages, the search will retrieve and display details of all the revisions including **Packaged Task Status**, **Previous Revision #, New Revision** # and **Task New Rev. # Date**.
- The system maintains a history of all the successful inheritances of task revision changes in packages.

Exhibit 1: Identifies the new activity – **Inherit Task Revisions to Package** in **Aircraft Maintenance Planning**



Ability to short-close and re-generate all Material Requests for Discrepancies during Package Release based on open Part Requirements at that time

Reference: APRP-401

Background

Normally, the part requirements for discrepancies are planned at the time of allocating a discrepancy to a package. However, in real time, part requirements could change subsequently leading to demand-supply imbalance. Hence, a provision to record the most current part requirements for discrepancies at the time of package release is required for maintenance planners.

Change Details

Based on new enhancement, the part requirements for a discrepancy can now be estimated as on the package release date (at the time the package is being released for execution.

To arrive at the latest / precise part requirements for discrepancies, new process parameter 'Auto Generate Material Requests for Discrepancies on Package Release?' has been added under the entity type Package Type and the entity Log Card, User Defined Values in the **Define Process Entities** activity of **Common Master.** The table next illustrates the functionality of the process parameter.

Process Parameter: Auto Generate Material Requests for Discrepancies on Package Release?	
Value	**Impact on MR generation for discrepancies**
0 for Not Required	The system will auto generate MRs for the part requirements against the discrepancies at the time of allocation to package.
1 for New Part Requirements	If the process "Auto Generate MR on Discrepancy Allocation for Parts/Quantities previously issued against the Discrepancy?" is also set as '0' for 'No', the system will deduct from the part requirements estimated at time of package release: 1. The quantities that were already requested by MRs against previous instances of the discrepancy in previous packages. 2. The quantities that are already issued against previous instances of the discrepancy in previous packages And 1. Generate new MRs for remaining quantities of required parts against the current package, if any
2 for All Part Requirements	If the process "Auto Generate MR on Discrepancy Allocation for Parts/Quantities previously issued against the Discrepancy?" is also set as '0' for '' 'No', the system will: 1. Short close all MRs generated against previous instances of the discrepancy (in other packages)

	2. Deduct quantities that are already issued against previous instances of the discrepancy in previous packages from the part requirements estimated at time of package release 3. Raise new MRs for the remaining parts/quantities of part requirements against the current package, if any.

WHAT'S NEW IN SHOP WORK ORDER?

Ability to Save as Draft the Component Replacement in Shop Work Order

Reference: APRP-744

Background

In **Shop Work Order**, whenever a part is removed from component, the system instantly generates the Component Removal / Attachment # followed by the work order / repair order. In cases where an incorrect part has been removed from the parent part work order, the users are left with no option but to cancel the incorrect child work order / repair order. Hence, a provision to save the component replacement records in the Draft mode is needed so that the users get an opportunity to verify the record details before the generation of Component Replacements.

Change Details

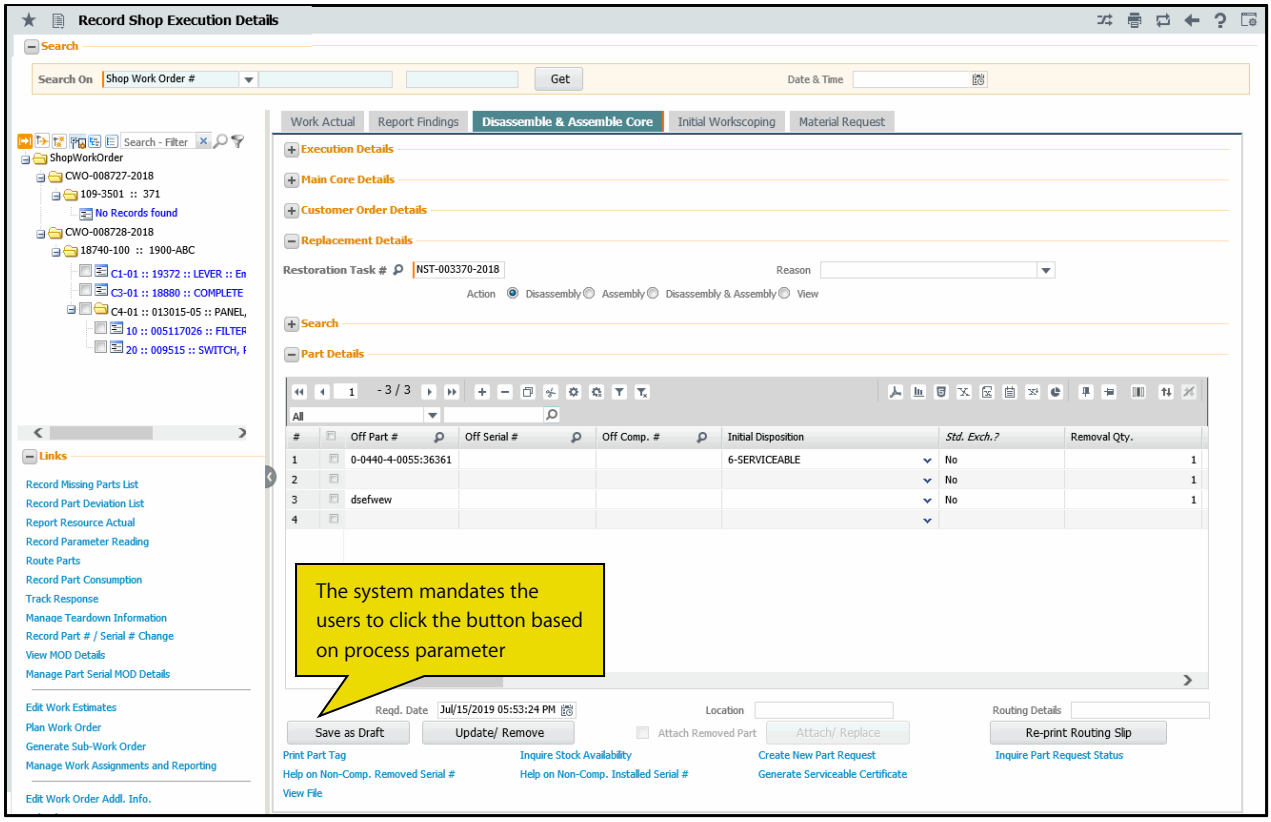
To enable saving of the component replacements in the Draft mode and hold back the generation of Comp. Removal/Attachment # , the following new developments have been incorporated in the system:

- New **Save as Draft** button has been added in the **Disassemble & Assemble Core** tab of the **Record Shop Execution Details** screen in **Shop Work Order**
- When the users click **Save as Draft**, the system saves the records in the **Part Details** multiline of the **Disassemble & Assemble Core** tab without generating the **Comp. Removal #/Comp. Attachment #**. The users will now be able to validate the component replacement details and then confirm the component replacement by clicking the existing **Update / Remove or Attach/Replace** button
- However, the push button - **Save as Draft** will be enabled only for the following actions:
    - **Disassembly**
    - **Assembly**
    - **Disassembly & Assembly**
- New process parameter 'Enforce Save as Draft before Confirmation of Disassemble & Assemble Core?' has been added under the entity type Shop Work Order Type and the entity --All Work Order—in the **Define Process Entities** screen of **Common Master** to mandate the saving of the CR record

Process Parameter: Enforce Save as Draft before Confirmation of Disassemble & Assemble Core?	
Process Parameter Value	**Impact in the Disassemble & Assemble Core tab**
0 for No	The system will allow the users to click the Update/Remove or Attach/Replace button without clicking the Save as Draft button
1for Yes	The system will NOT allow the users to click the Update/Remove or Attach/Replace button prior to clicking the Save as Draft button

- Such **Component Replacement** records will not be retrieved for display in the **View Component Replacement** screen.

Exhibit 1: Identifies changes in the **Record Shop Execution Details** screen



Ability to display Main Core routing status for Externally routed tasks in View Work Order

Reference: APRP-166

Background

Currently, in **Ramco Aircraft Maintenance**, whenever a main core is routed to external repair, the execution status of the outsourced task is set as "Ext. Routed". A repair order is created to this effect and then the main core part is shipped to the external agency. The part is received back into the organization after the completion of the planned tasks. To signal the receipt of the externally routed part into the work center post execution / completion of the external task, it is required that the execution status be set as "Closed" / "Received". This will inform the users that the associated task has been closed and the unit has moved on to the next phase in the maintenance workflow.

Change Details

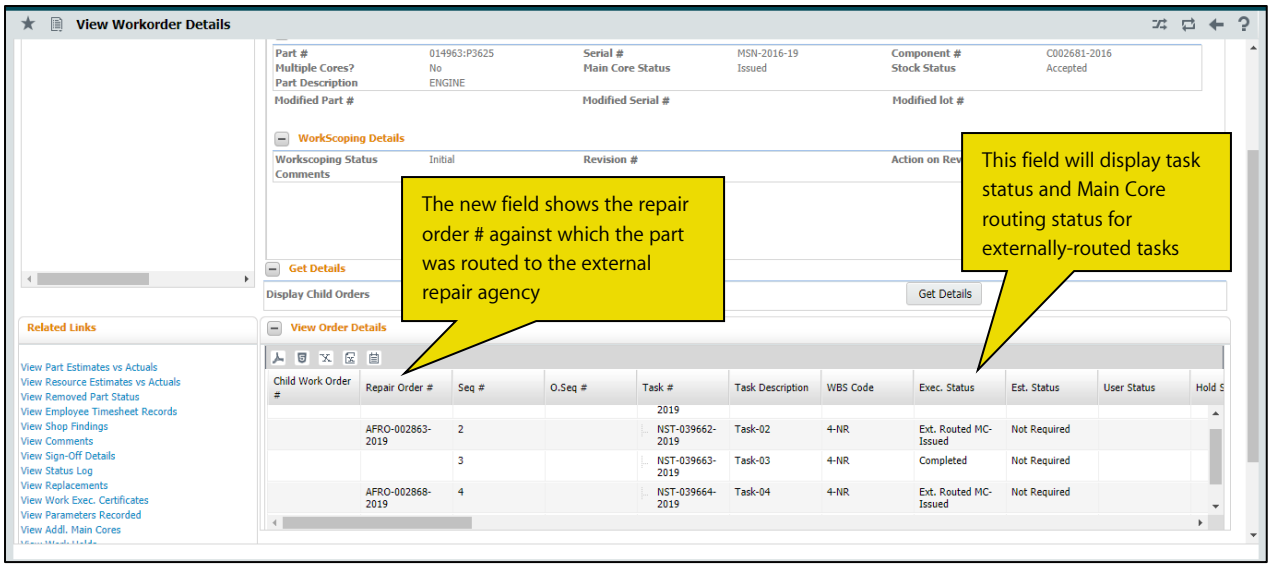
To indicate the receipt of the part from the repair agency upon completion of repairs, the following changes have been undertaken in the **View Workorder Details** screen of **Shop Work Order**.

- New process parameter 'Additional Display of Main Core routing status for Externally routed tasks in View Work Order?' has been added under the entity type **Shop Work Order Type** and the entity All Work Order Types in the **Define Process Entities** activity of **Common Master** to indicate the completion of the external task planned in the repair order.

Process Parameter: Additional Display of Main Core routing status for Externally routed tasks in View Work Order?	
Parameter Value	**Impact on the Exec. Status field in the View Workorder Details screen**
1 for Yes	The **Exec. Status** field for external tasks will display the status of the external task along with the Main Core status. Example: Ext. Routed MC-Issued, Ext. Routed MC-Ext. Routed BER.
0 for No	The **Exec. Status** field will continue to display only the status of external tasks as "Ext. Routed" even after the parts are received back from the repair agencies.

- New field **Repair Order #** has been added in the **View Order Details** multiline to provide visibility to the repair order # against which the part was routed to external repair agency.

Exhibit 1: Identifies the changes in the **View Workorder Details** screen



Ability to print COC remarks in additional pages as per regulatory instruction (FAA)

Reference: APRP-151

Background

In the electronically-printed Certificate of Conformance (CoC), when the text in the **Description of Work** block exceeds certain lines, the rest of the block including certifying statement, signature and date is pushed to the next page. However, this is not valid as all blocks of the CoC must be covered in one page and must not exceed one page according to the Aviation regulatory authorities.

Hence, a provision is needed wherein the excess lines of text in the **Description of Work** block are accommodated while retaining the size of the main page of the CoC to a single page.

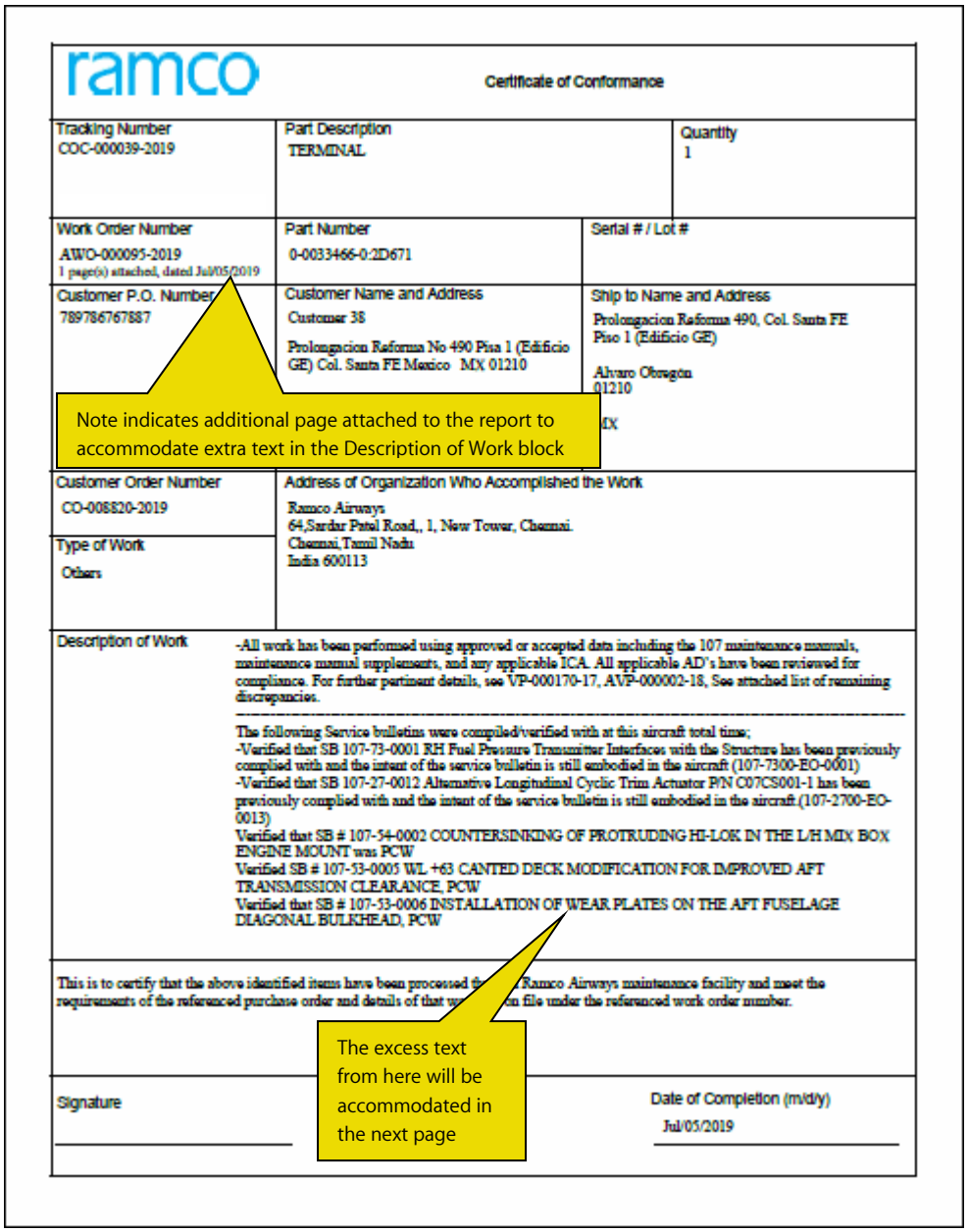
Change Details

To enable generating the CoC in a single page, the following changes have been incorporated in the report format:

- If the **Description of Work** block of the COC has content exceeding one page, then **Work Order Number** block will display the number of pages attached along with the date in the following format:
    - <%1> page(s) attached, dated <date of CoM printing, as per the login user preference format>

    Note : This is applicable for both print options: 'Print MRO C of C' and 'Print Part 21 C of C'
- The excess content from the **Description of Work** block will be displayed in an additional page with the following information in the listed order from left to right in the header:
    - Tracking Number - CoC #
    - Title of the continuation page (Certificate of Conformance Continuation Page <%1> of <%2>)
    - Issuing Organization Name
    - Dated - Current date of CoC printing as per login user preferred date format

Exhibit 1: New format for **Certificate of Conformance**



ramco

Certificate of Conformance

Tracking Number	Part Description	Quantity
COC-000039-2019	TERMINAL	1

Work Order Number	Part Number	Serial # / Lot #
AWO-000095-2019 1 page(s) attached, dated Jul/05/2019	0-0033466-0:2D671	

Customer P.O. Number	Customer Name and Address	Ship to Name and Address
789786767887	Customer 38 Prolongacion Reforma No 490 Piso 1 (Edificio GE) Col. Santa FE Mexico MX 01210	Prolongacion Reforma 490, Col. Santa FE Piso 1 (Edificio GE) Alvaro Obregon 01210 MX

Customer Order Number	Address of Organization Who Accomplished the Work
CO-008820-2019	Ramco Airways 64,Sardar Patel Road,, 1, New Tower, Chennai. Chennai,Tamil Nadu India 600113
Type of Work Others	

Description of Work

-All work has been performed using approved or accepted data including the 107 maintenance manuals, maintenance manual supplements, and any applicable ICA. All applicable AD's have been reviewed for compliance. For further pertinent details, see VP-000170-17, AVP-000002-18, See attached list of remaining discrepancies.

The following Service bulletins were compiled/verified with at this aircraft total time;
-Verified that SB 107-73-0001 RH Fuel Pressure Transmitter Interfaces with the Structure has been previously complied with and the intent of the service bulletin is still embodied in the aircraft (107-7300-EO-0001)
-Verified that SB 107-27-0012 Alternative Longitudinal Cyclic Trim Actuator P/N C07CS001-1 has been previously complied with and the intent of the service bulletin is still embodied in the aircraft.(107-2700-EO-0013)
Verified that SB # 107-54-0002 COUNTERSINKING OF PROTRUDING HI-LOK IN THE L/H MIX BOX ENGINE MOUNT was PCW
Verified SB # 107-53-0005 WL +63 CANTED DECK MODIFICATION FOR IMPROVED AFT TRANSMISSION CLEARANCE, PCW
Verified that SB # 107-53-0006 INSTALLATION OF WEAR PLATES ON THE AFT FUSELAGE DIAGONAL BULKHEAD, PCW

This is to certify that the above identified items have been processed th Ramco Airways maintenance facility and meet the requirements of the referenced purchase order and details of that w n file under the referenced work order number.

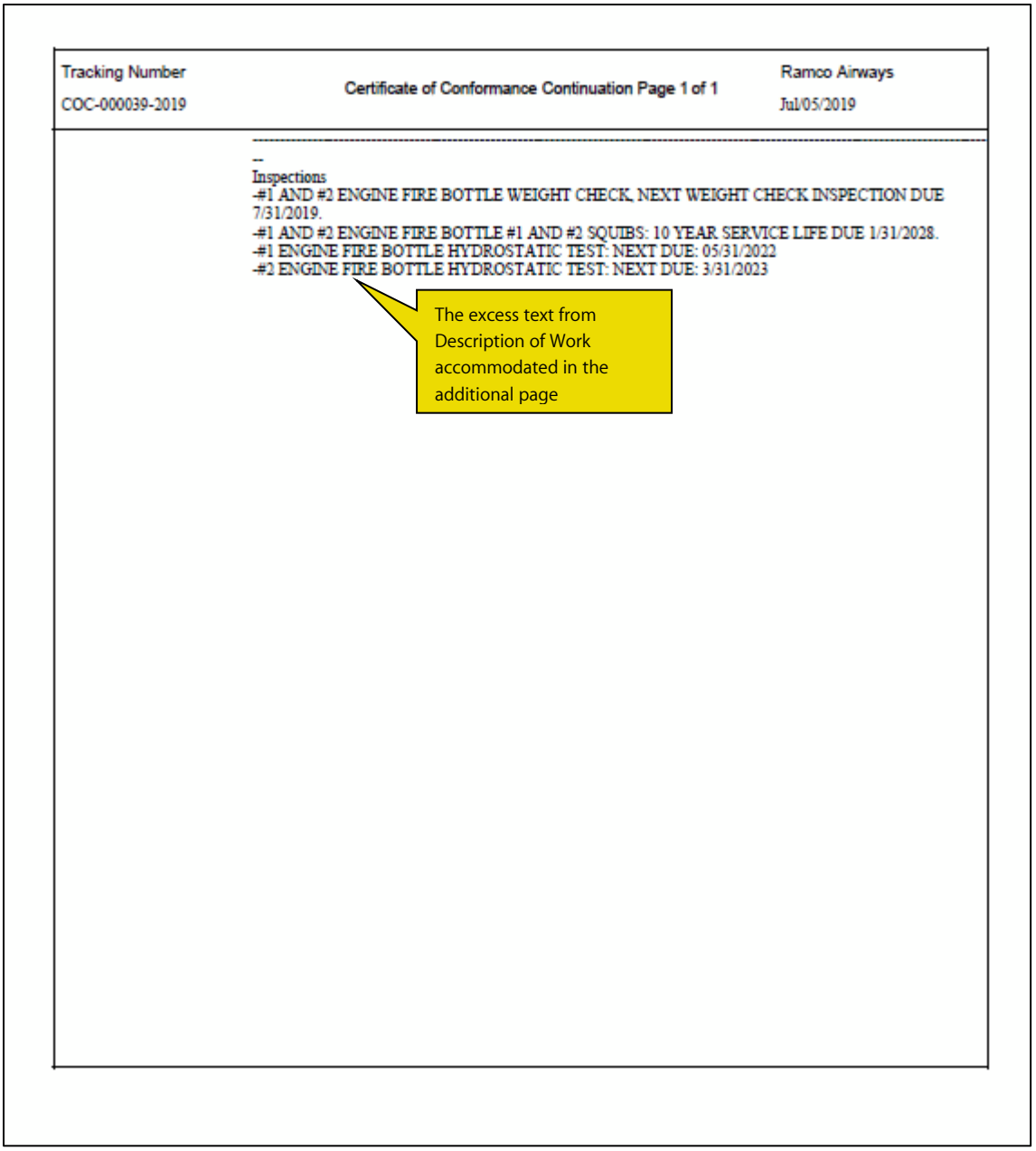
Signature

Date of Completion (m/d/y)
Jul/05/2019

Note indicates additional page attached to the report to accommodate extra text in the Description of Work block

The excess text from here will be accommodated in the next page

Exhibit 2: The additional page in **Certificate of Conformance**



Ability to request different Part # MR instead of Removed Part

Reference: APRP-149

Background

In Ramco Aircraft Maintenance, when a part is scrapped after removal or identified as BER part in the repair order, the system automatically generates a material request for the scrapped / BER part. However, many a times enhanced / upgraded parts are substituted for the scrapped parts and hence a provision to generate material request for upgraded parts specified by the users is required

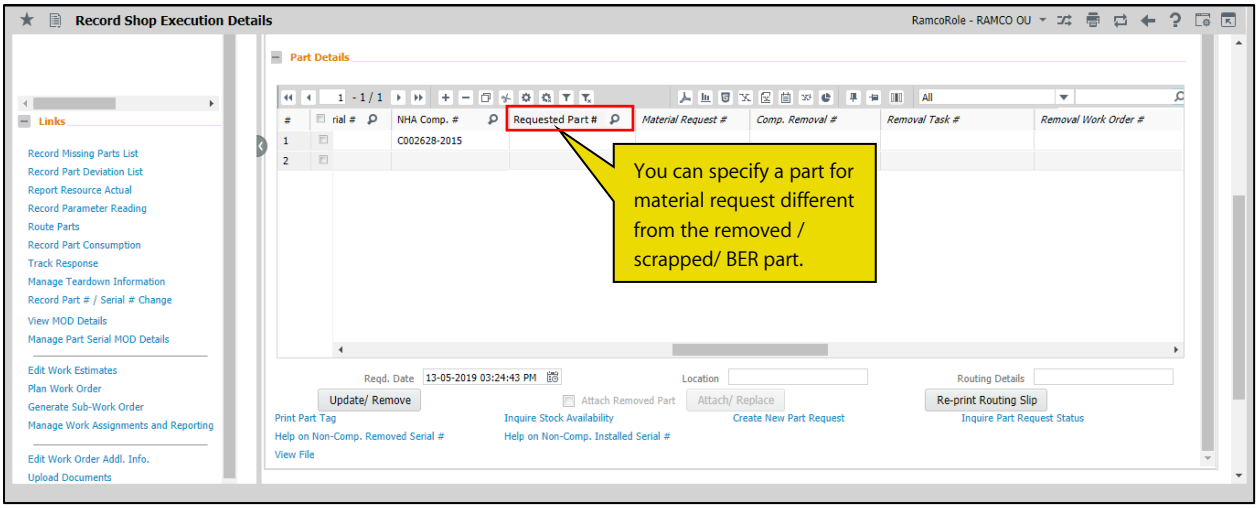
Change Details

To facilitate the generation of the material requests for parts specified by the users against scrapped / BER parts, the following changes have been undertaken in **Shop Work Order**:

- New input field – **Requested Part #** has been added in the **Part Details** multiline of the **Disassemble & Assemble Core** tab of the **Record Shop Execution Details** screen. This field will enable the users to specify the part# for which the material request must be generated in order to replenish the scrapped / BER part.
- New process parameter 'Allow Requested Part # which is not an alternate of the Removed Part # during Disassembly & Assembly?' has been added under the entity type **Shop Work Order Type** and the entity **All Work Order** in the **Define Process Entities** activity of Common Master to allow the generation of a material request for a part other than the scrapped part or its Alternate.

Process Parameter: Allow Requested Part # which is not an alternate of the Removed Part # during Disassembly & Assembly?	
Value	**Impact on generation of material requests**
1 for Allowed	The system allows the generation of a material request for the requested part regardless of whether the requested part is the scrapped part of its Alternate
0 for Not Allowed	The system does not allow the generation of a material request for the requested part if the requested part is the scrapped part or its Alternate

Exhibit 1: Identifies the changes in the **Disassemble & Assemble Core** tab of the **Record Shop Execution Details** screen



WHAT'S NEW IN ENGINEERING CHANGE MANAGEMENT?

Enhancements in Engineering Change Management

APRP-240, APRP-241, APRP-242, APRP-243, APRP-244, APRP-611, APRP-676

Background

The engineering change management process has been primarily enhanced with capturing additional criteria to decide the components affected by an engineering change and including a restriction framework as a part of engineering change management. This way the Engineering team can enter an SB/AD/SIL directly into the system without having to decode the components affected by them. An auxiliary impact assessment process has been introduced to understand the impact of an Engineering Change on components and customer contracts in the system.

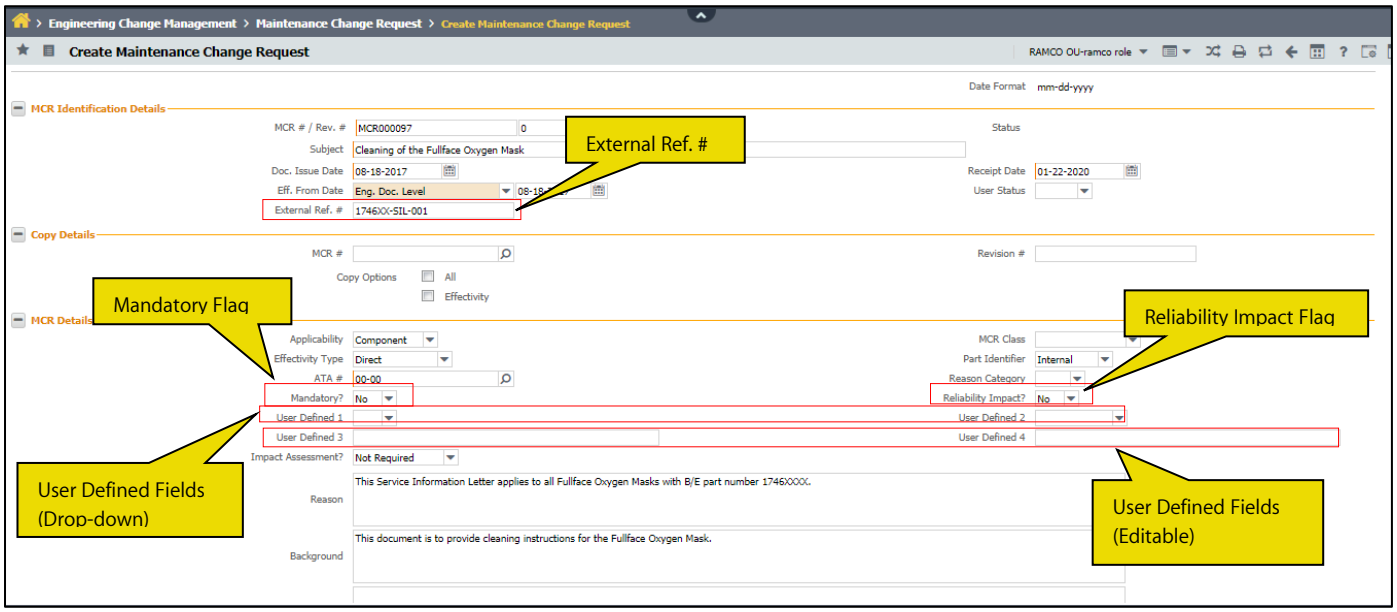
Change Details

Maintenance Change Request

In **Maintenance Change Request** business component, the following controls are added to meet various requirements:

a. Two fields 'Mandatory?' and Reliability 'Impact?' are added to identify if an engineering change is mandatory and if an engineering change will affect the reliability.
b. Four user defined fields have been added in the MCR as a data capture that can then be used for reporting purposes. Out of the four, two user defined fields have been provided as a drop-down and two others as editable fields.
c. 'External Ref. #' field has been added to capture the SB/AD/SIL number against which the MCR is being created.

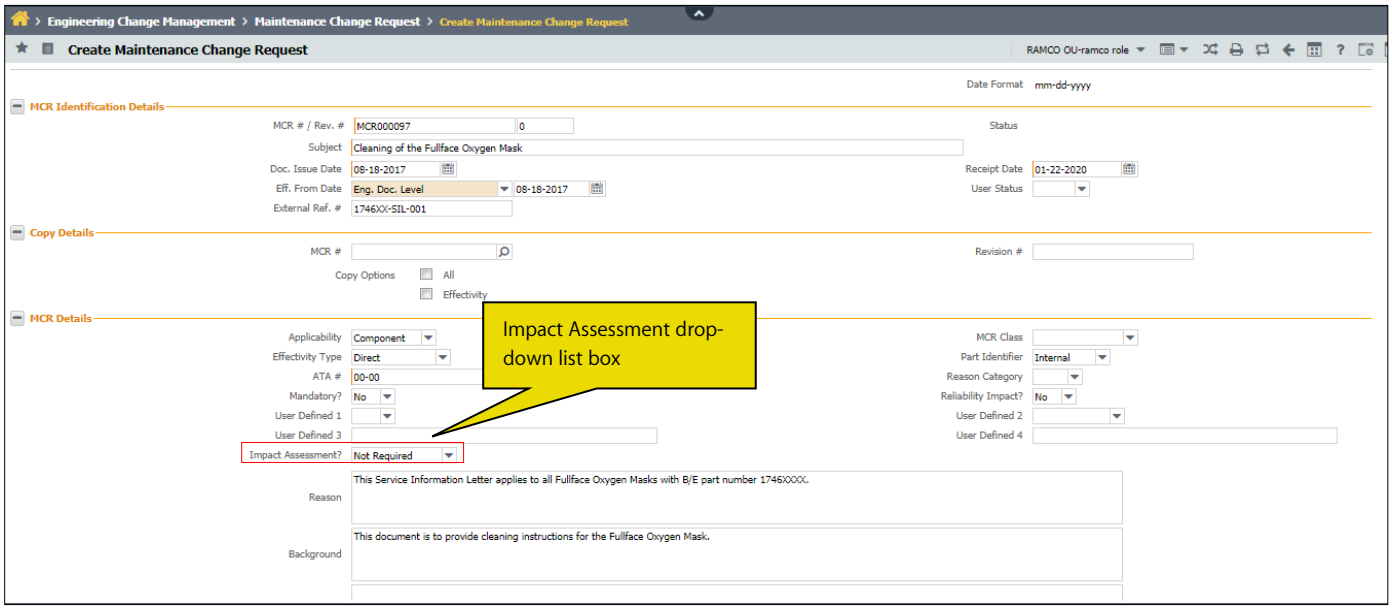
Exhibit 1: New controls addition in **Create Maintenance Change Request** screen



d. 'Impact Assessment?' flag has been introduced to decide if a change request needs an impact assessment carried out on it. Impact assessment is nothing but understanding which components are affected by the engineering change and which customer contracts are in place to cover these changes. A process parameter is added to decide if the impact assessment process is applicable to an organisation. This flag is only activated if the process parameter is configured to make impact assessments applicable to engineering change on a case to case basis.

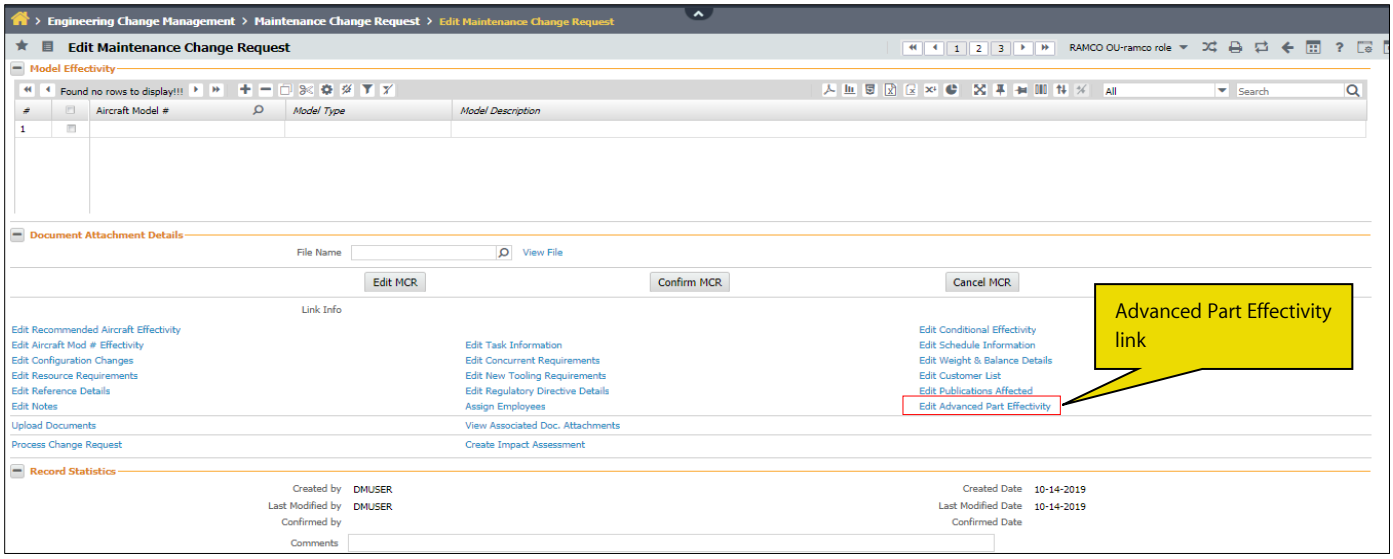
If a maintenance change request is flagged as impact assessment not required, system will not consider the MCRs in 'Confirmed' status without impact assessment document towards MCRs pending impact assessments. Further details about impact assessment are covered in the Impact Assessment section of the enhancement notification.

Exhibit 2: Impact Assessment flag in **Create Maintenance Change Request** screen



Apart from controls that are added on MCR screens, few new links have been added. Firstly, a new link called "Edit Advanced Part Effectivity" has been introduced to capture part serial effectivity for an engineering change. On click of this link the "Edit Advanced Part Effectivity" screen is launched that has some part criteria to decide the part numbers that are affected and serial criteria to decide the specific serials under the part number that are affected by the Engineering Change.

Exhibit 3: Advanced Part Effectivity link in **Edit Maintenance Change Request** screen

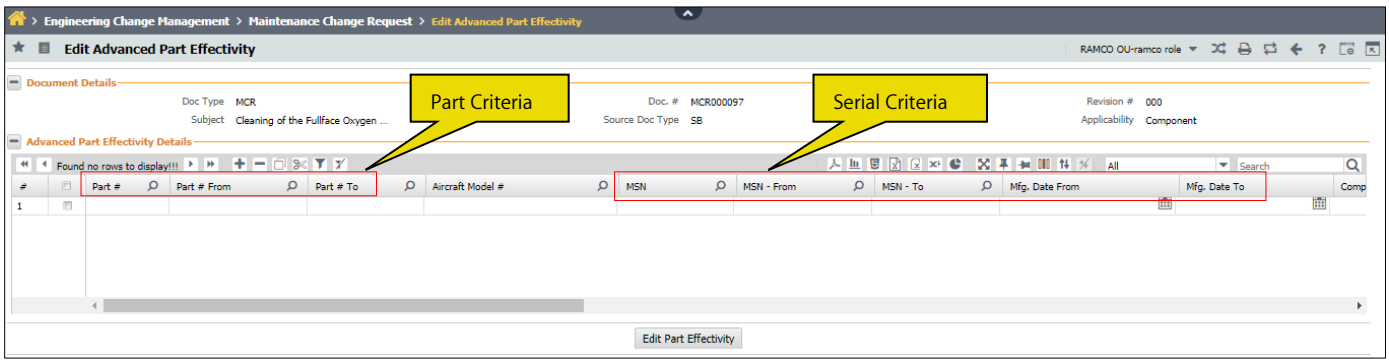


Part criteria includes a specific part# and part# range. A range of affected parts can either be defined in terms of a from and to part# in which case system will fetch all parts that fall between the two part# or by including one or more "*" in the part# in which case system will replace the "*" with Alphanumeric characters and identify parts from the system that match the criteria.

Serial criteria include a specific serial#, serial# range and manufacturing date range. A range of affected serials to a part or group of parts can either be defined in terms of a from an to serial# in which case system will fetch all serials that fall between the two serial# or in terms of a from and to manufacturing date in which case the system will fetch all serials that were manufactured between the two dates provided. Specific component# can also be entered directly instead of part criteria and serial criteria. If user enters an aircraft model, system will check if the part criteria mentioned is mapped to the aircraft model in "Manage Part Effectivity" screen.

Apart from part and serial criteria this screen also has some data capture fields to capture mod information, repair agency and repair date range. This screen also carries the restriction framework which is nothing but associating a restriction code to a specific part or component in the system. As a part of restriction framework a flag to capture if restriction is applicable to a row and the restriction code to be associated to the components covered in a row are introduced along with any restriction remarks. Applicability group can also be defined to each row in advanced part effectivity. All this information will then flow into a process change request document created form the MCR.

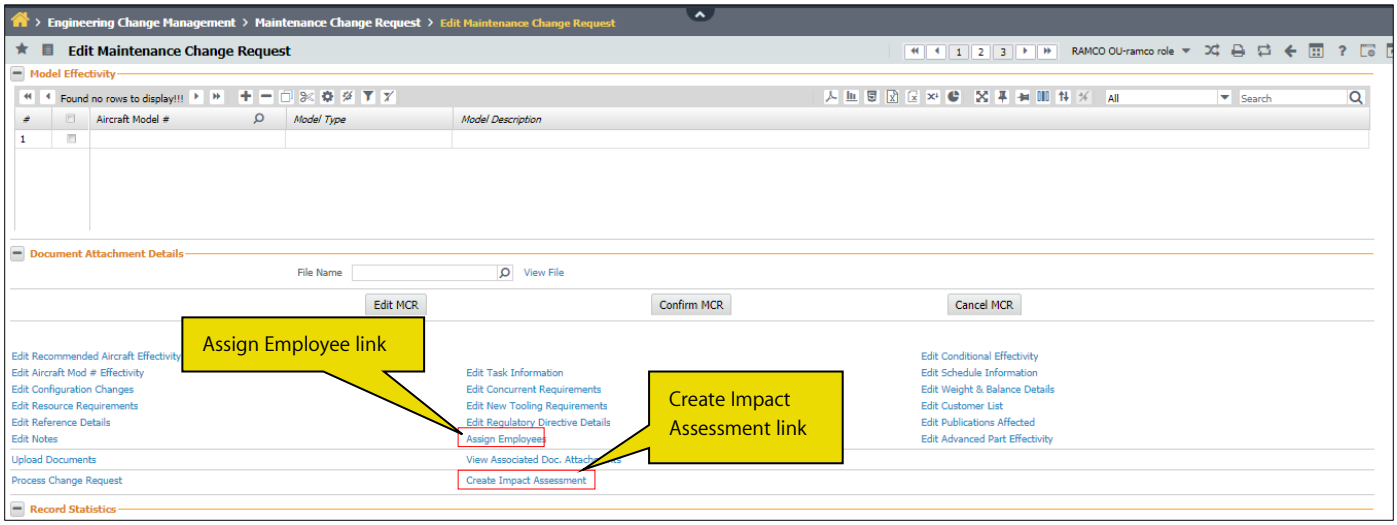
Exhibit 4: Edit Advanced Part Effectivity screen **(Part Criteria & Serial Criteria)**



The next link that has been added is the "Assign Employee" link. This is to identify the employee who is assigned to a particular Engineering Change in any organisation. This link was previously only available for an Engineering Order document but this is now available in Maintenance Change Request as well.

Finally a new link called **Create Impact Assessment** has been added to enable users to create an impact assessment document from Maintenance Change Request. This link can only be launched for an MCR in "Confirmed" status. Further details about impact assessment can be found in the Impact Assessment section of the document.

Exhibit 5: Assign Employee & **Create Impact Assessment** links in **Edit Maintenance Change Request** screen



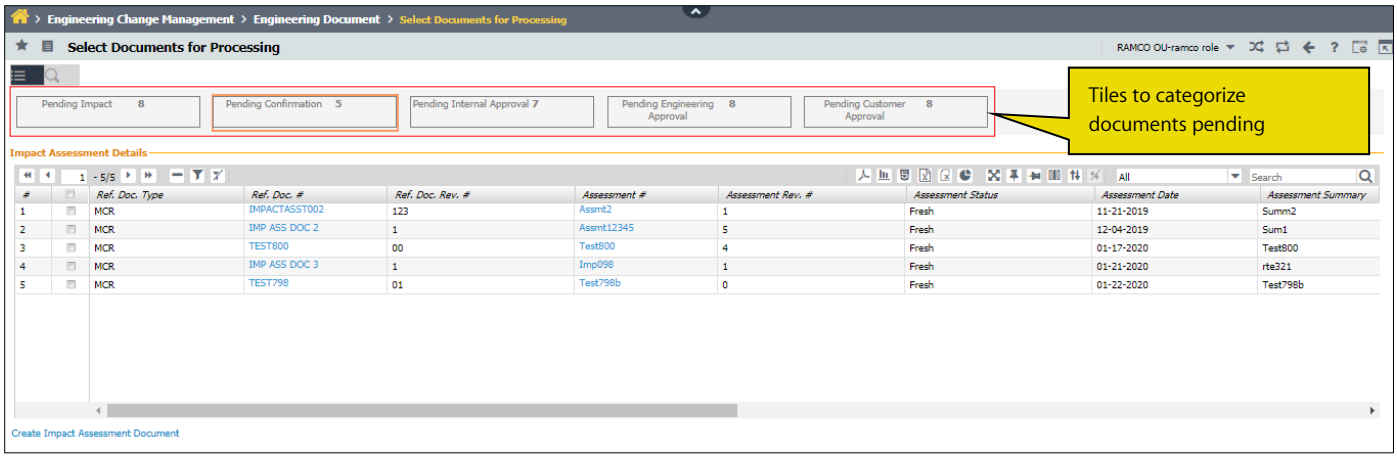
Impact Assessment

Impact assessment is carried out by the Engineering Team in an organization to primarily understand the financial benefit in performing an Engineering Change. This is mostly applicable to engineering changes that are not mandatory but have a reliability benefit. System will display the number of components that are affected by the change and any MRO can analyze the cost benefit in carrying out the change based on this number.

In case of organizations that operate in an ITM model, they can also analyze the customer contracts in place to cover the maintenance of the affected parts. They can then estimate the number of affected parts for each customer and initiate a customer request to perform the change and showcase the financial benefit that arises from the change.

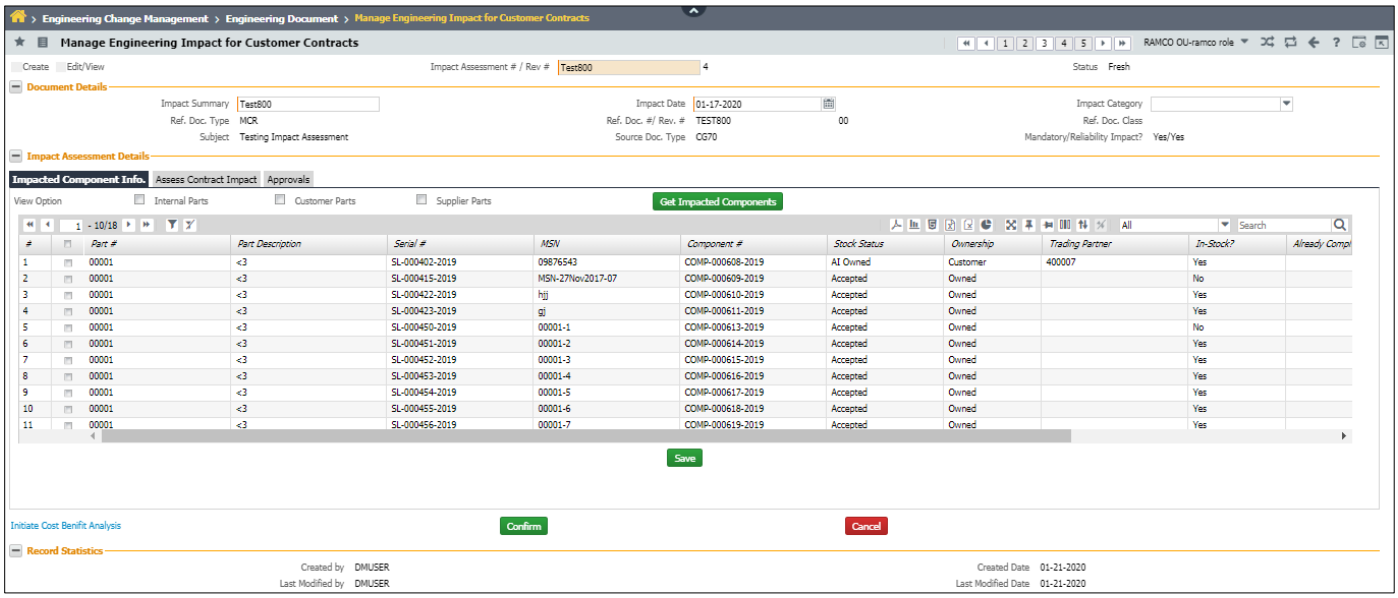
The impact assessment document that is rolled out can display the impacted components and impacted contracts based on a maintenance change request entered in the system. Once the impact is analyzed, approvals against the impact can also be recorded and tracked within the document. An entry point screen is provided to categorize impact assessment documents pending different approvals, through tiles. A search page is also provided to search for a specific impact assessment.

Exhibit 6: Select Documents for Processing screen (Select screen for Impact Assessment documents)



The impacted component tab displays all 'active' components in the system, that are affected by the Engineering Change based on the advanced part affectivity. This tab will also display the stock status, ownership, mod information and availability of the components in the system.

Exhibit 7: Impacted Component Info. tab



The assess contract impact assessment tab can either be used to enter parts and their contract information and system will fetch the affected number of parts attached to a specific aircraft model or specific aircraft or the help on impacted contracts can be used to fetch contracts that are impacted based on the parts that are affected by the engineering change from advanced part effectivity in MCR.

Exhibit 8: Assess Contract Impact tab

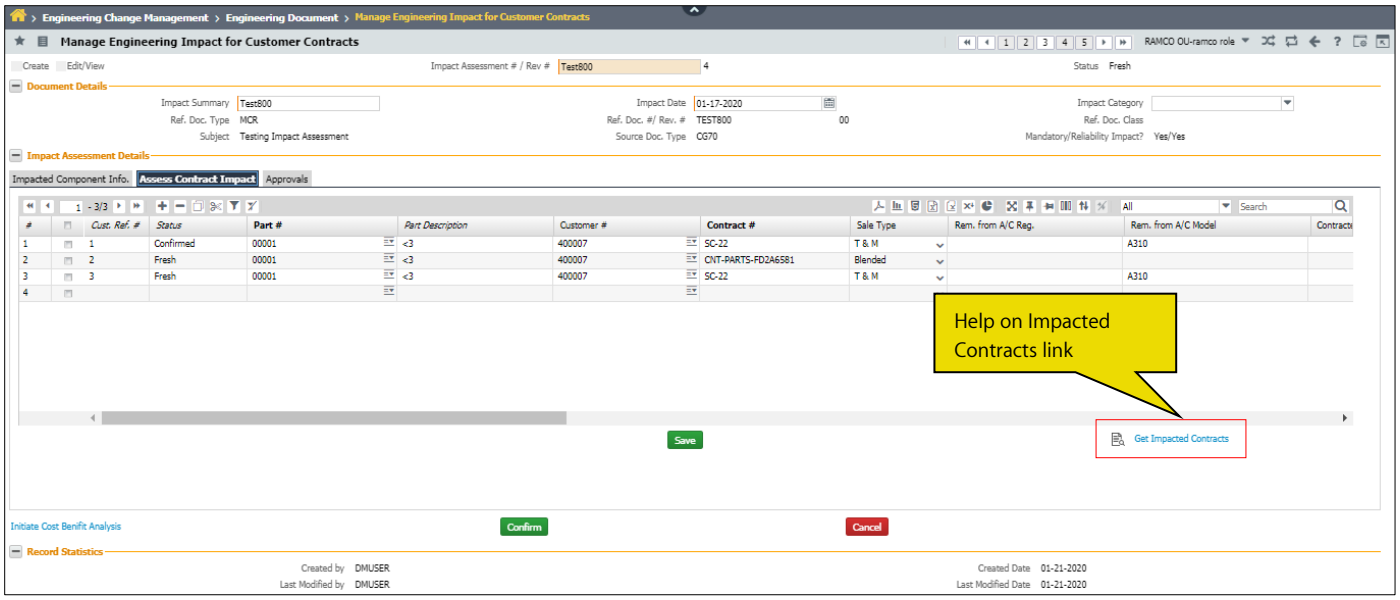
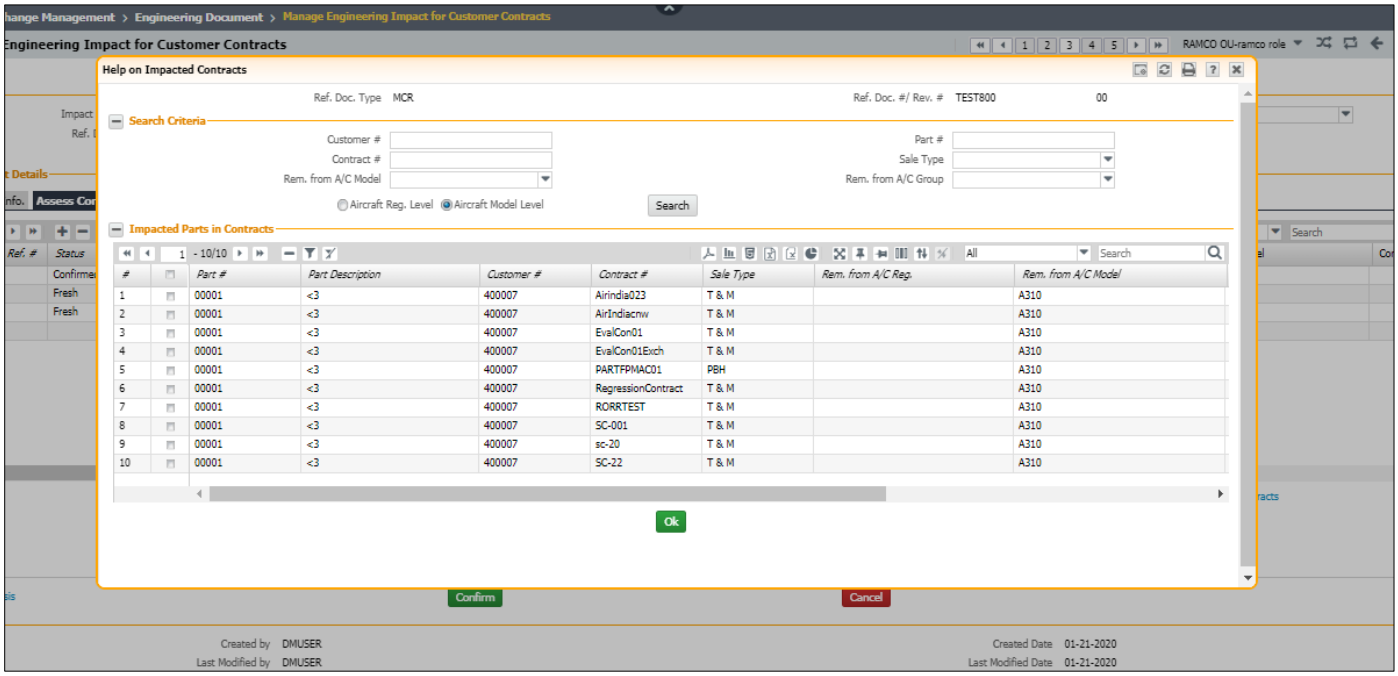
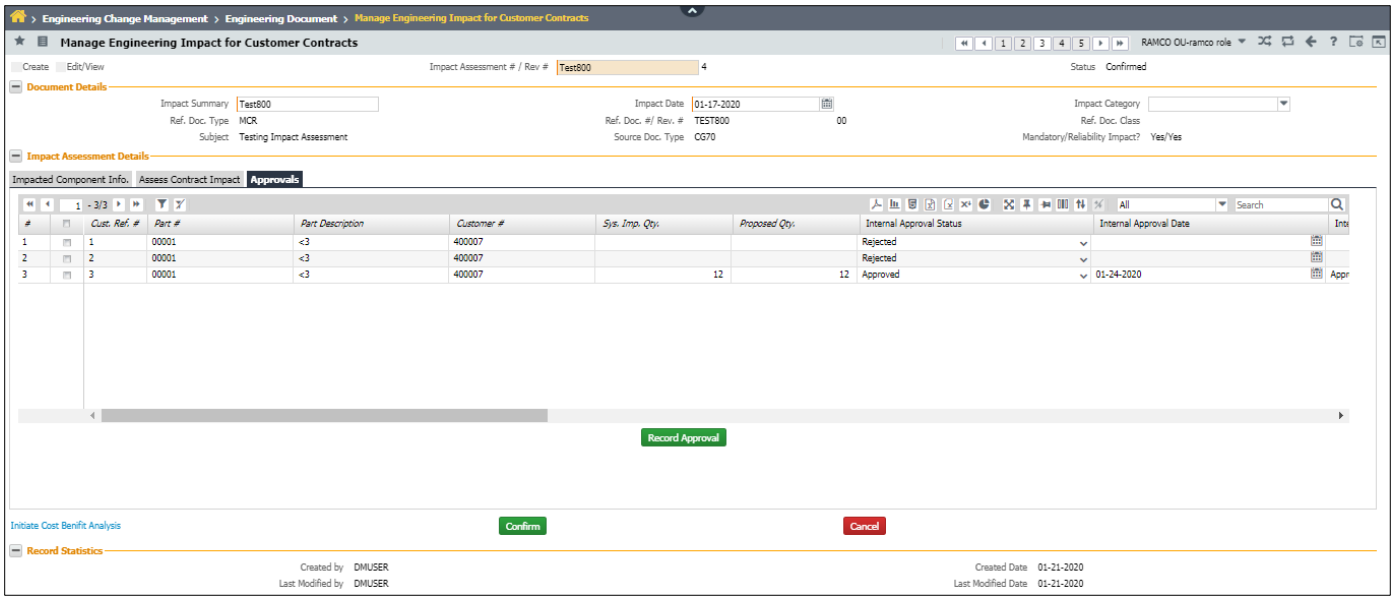


Exhibit 9: Help on Impacted Contracts screen



The impact assessment document comes with a third tab for managing the approvals on each row in contract impact tab. The significance of each row is that they carry the impact of a part on a specific customer contract. System can capture an internal approval, engineering approval and a customer approval. If any of these approvals are flagged as required in the contract impact tab, on confirmation of the row it shows up for approval in the approval tab.

Exhibit 10: Approvals tab



Process Change Request

In Process Change Request, an auto-embodiment flag is introduced to enable auto-embodiment during the decision for executing the engineering change. This flag will then flow to an Engineering Order that is created from the PCR.

Some user defined fields are now added to PCR document to capture any additional data during the processing of an engineering change which can be used for reporting purposes. User defined fields are added both in the header and the multiline of the document.

Exhibit 11: Auto-Embodiment Flag and User Defined fields in Header in Process Change Request screen

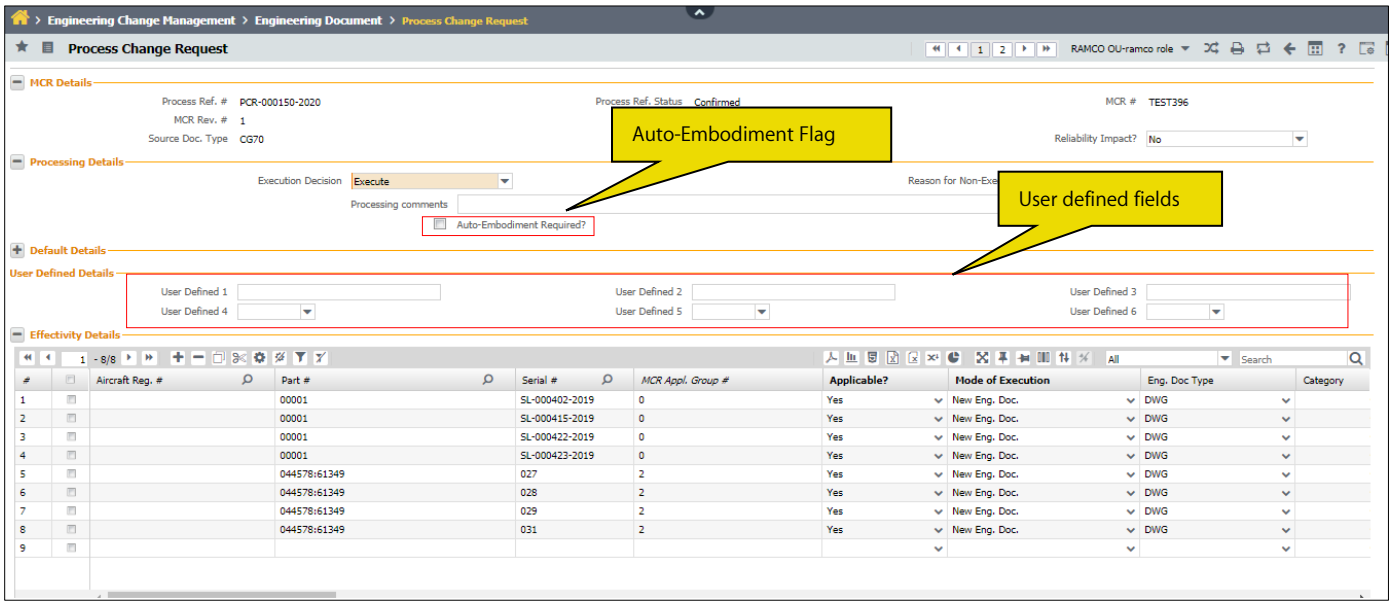
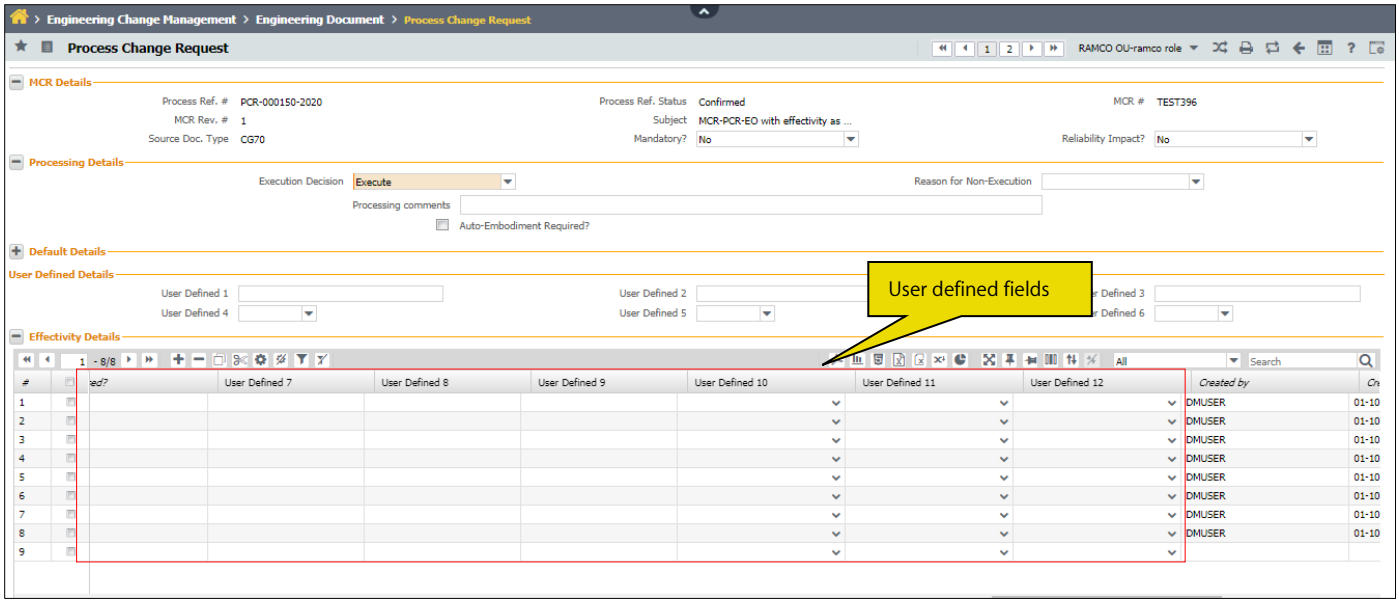


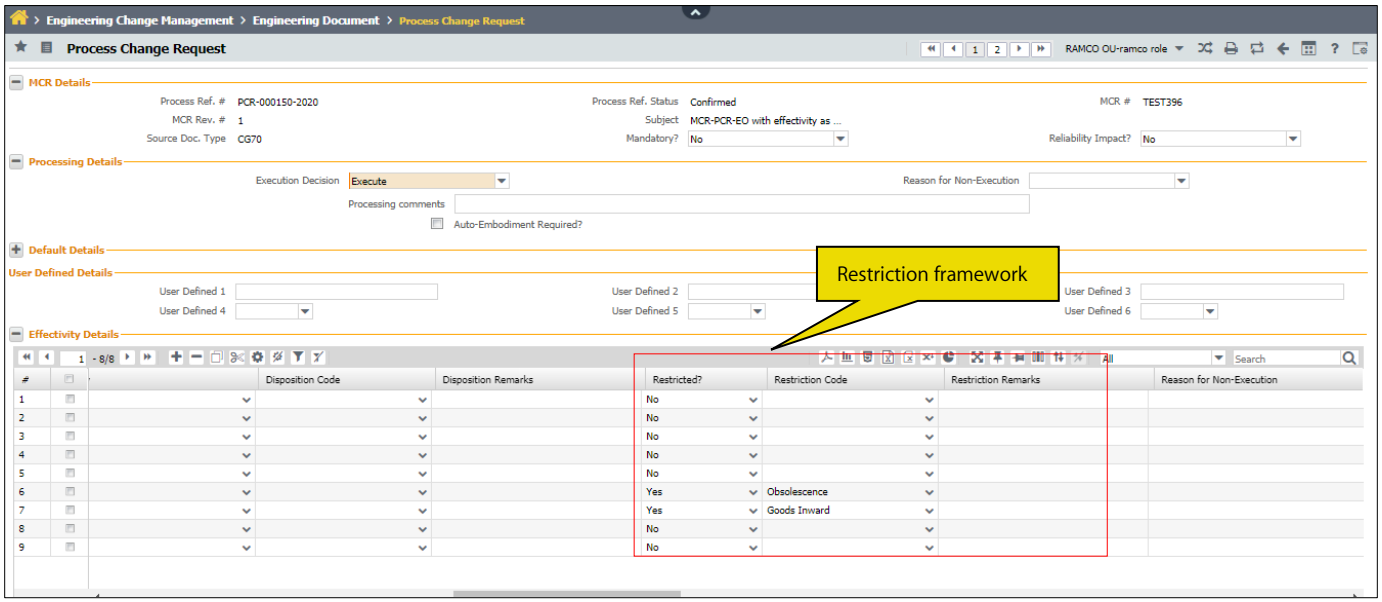
Exhibit 12: User defined fields added in multiline of **Process Change Request** screen



One of the key enhancements in PCR is for the system to explode the impacted part serials based on the criteria mentioned in the new advanced part effectivity screen.

Disposition code and Disposition remarks are added in the multiline to capture if this change will be carried out on-attrition or on a retrofit program or on next shop visit. Remarks to these disposition decisions can also be captured. The restriction flag, restriction code and restriction remarks flows from advanced part effectivity to Process Change Request. All components that arrived at based on a set of criteria from a particular row in advanced part effectivity will inherit the restriction flag, restriction code and restriction remarks in that row. A similar behaviour will be observed for advanced part effectivity.

Exhibit 13: Restriction framework in PCR



Engineering Document

Engineering Document has been enhanced to apply the restrictions defined in PCR to the component on release of EO. The auto embodiment function has also been enhanced to auto embody based on the new advanced part effectivity and the criteria mentioned there. Apart from this, a set of user defined fields have been provided on the header and multiline of Engineering Document as well. These fields can be used to capture any data which can be used for reporting.

Exhibit 14: User Defined fields in Header of **Manage Eng. Doucment** screen

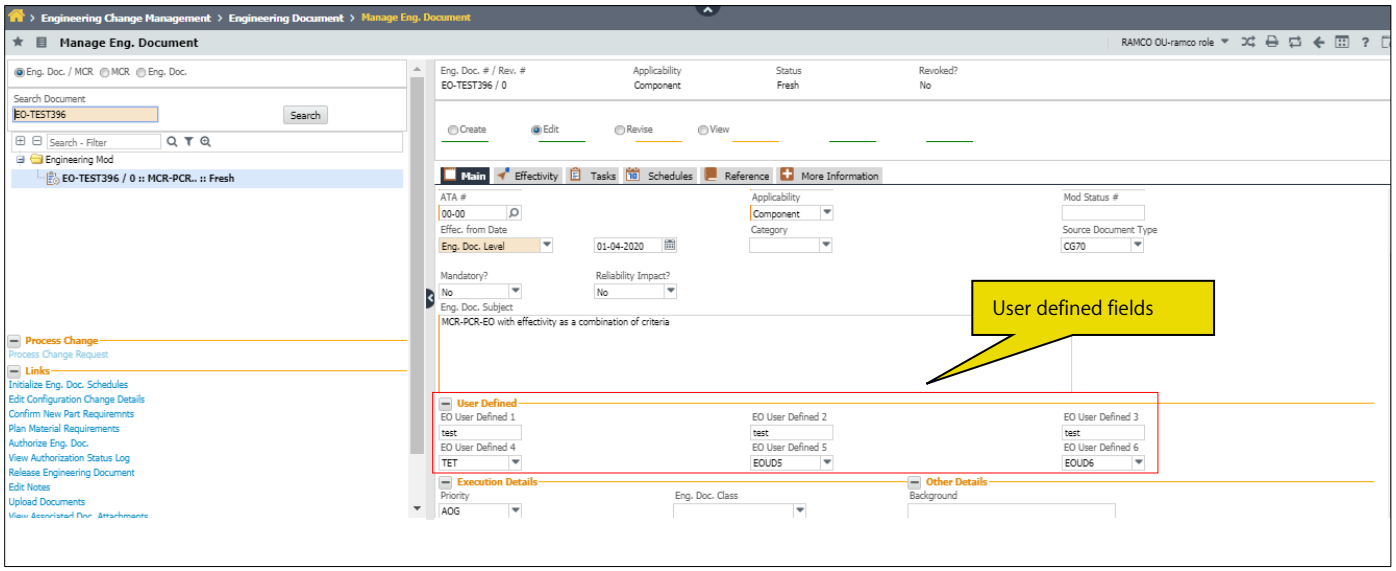
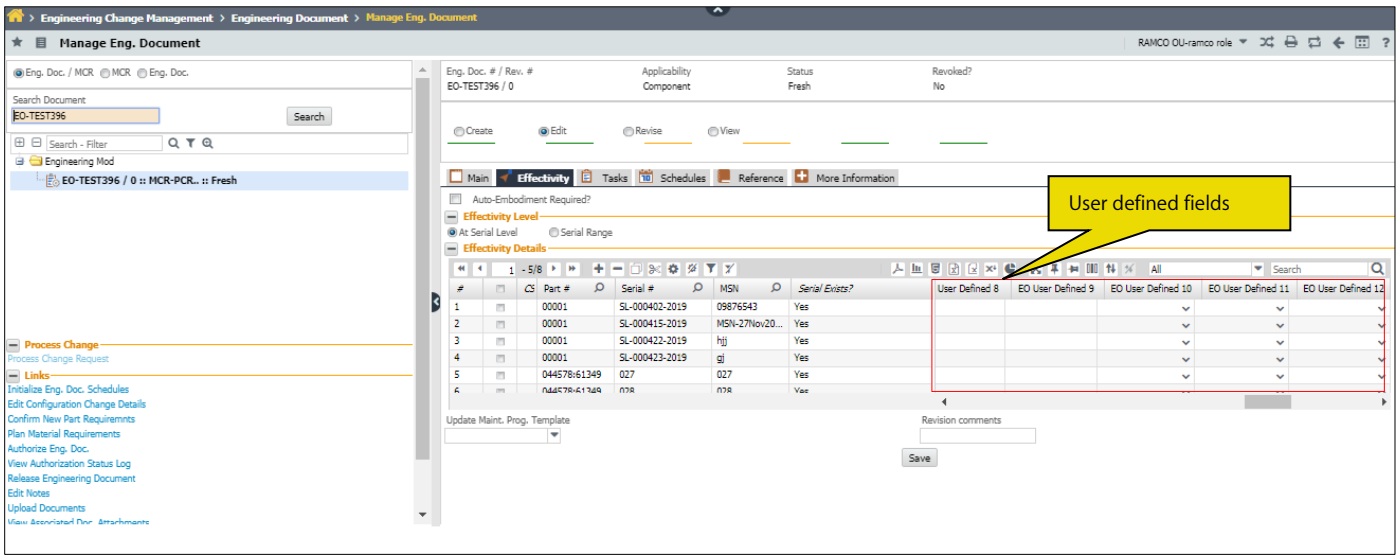
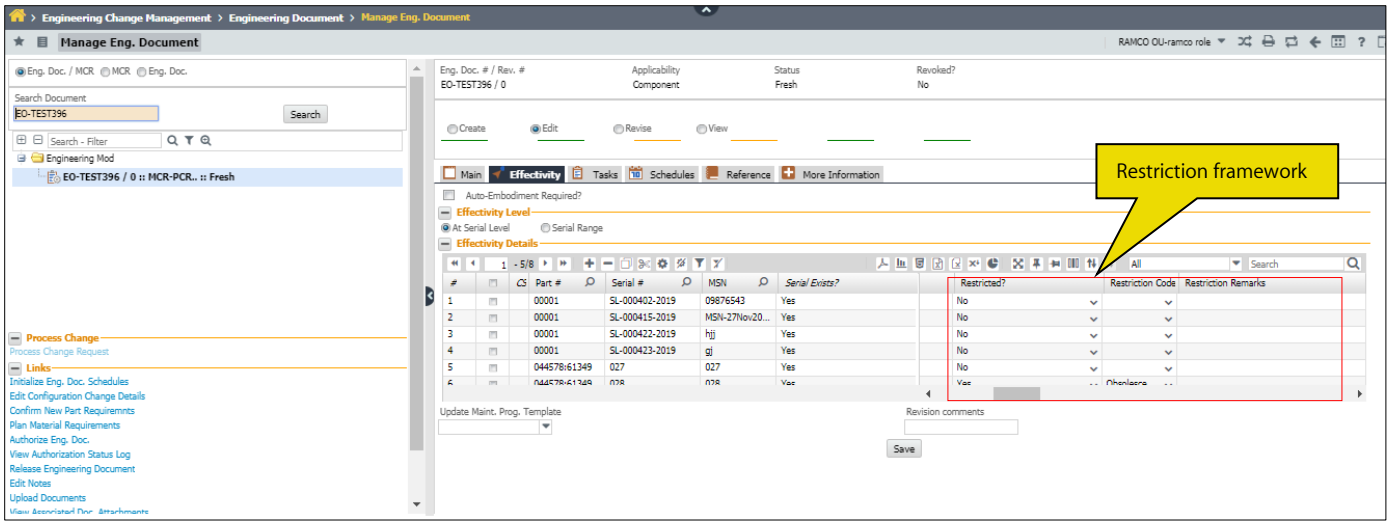


Exhibit 15: User Defined fields in multiline of **Manage Eng. Document** screen



Controls such as disposition code, disposition remarks, restriction flag, restriction code and restriction remarks are added in the multiline in Effectivity tab for data coming from PCR and provide the ability to edit any of this data before releasing an engineering document.

Exhibit 16: Restriction framework in Manage Eng. Document screen



Ability to specify Effective From Date at Maintenance Object level in MCR and EO

Reference: APRP-150

Background

Currently, Engineering Order function in Ramco has a provision to specify the Effective Date of Maintenance Change Request/Engineering Order only at the document level i.e., effective date is the same for all the Aircraft or Components in the MCR/EO. However, there are AD/SBs impacting multiple Aircraft or Components that is effective from the Entry into Service Date or Delivery Date or Manufacture Date. Hence, in this enhancement provision to specify Effective Date in MCR/EO at the Maintenance Object level is provided.

Change Details

Common Master

Define Process Entities

A new process parameter "Allow modification of 'Eff. From Date' basis upon revision of Eng. Doc.?" is added under the Entity Type 'Eng. Doc Type' and Entity 'All Eng. Doc" in the **Define Process Entities** activity of the **Common Master** business component. The following are the permitted values:

- '0'(No) – Does not allow modification of the Effectivity From Date Basis upon/after revision of the Eng. Doc. #.
- '1'(Yes) – Allows modification of the Effectivity From Date Basis upon/after revision of the Eng. Doc. #.

Maintenance Change Request

Create Maintenance Change Request

A new drop-down field "Eff. From Date" is added in the "MCR Identification Details" section with the following values:

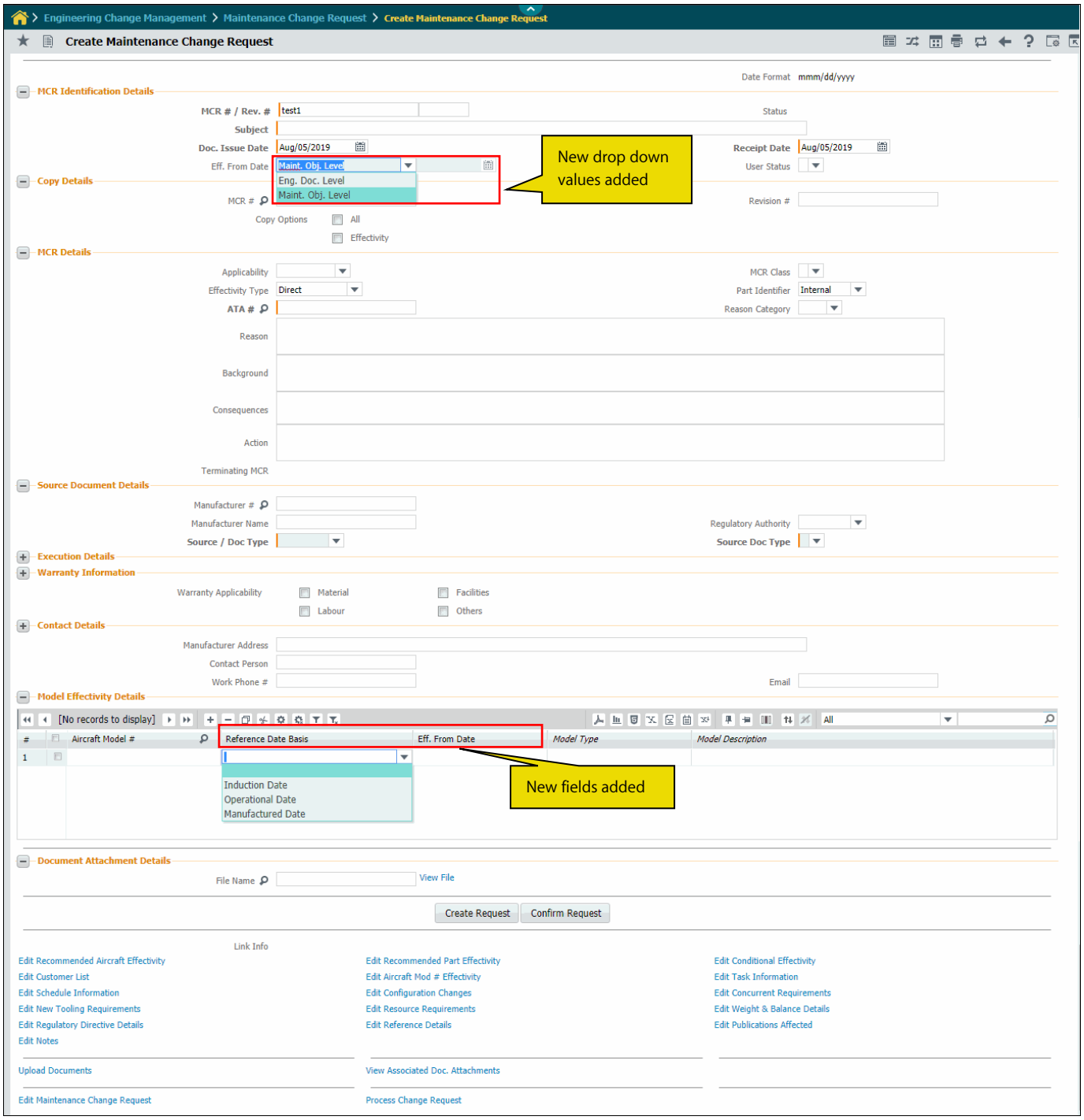
- Eng. Doc. Level – Effective From Date of the MCR is specified at document level.
- Maint. Obj. Level - Effective From Date of the MCR is specified at maintenance object level.

On selection of the value 'Eng. Doc. Level', the editable field alongside gets enabled.
On selection of the value 'Maint. Obj. Level', the following fields appear in the "Model Effectivity Details" multiline:

- Reference Date Basis – The Effective From Date of the maintenance Object which could be "Induction Date", "Operational Date" or "Manufactured Date.
- Eff. From Date - The Effective From Date of the maintenance Object.

Same fields are added in the **Edit Maintenance Change Request** and **Revise Maintenance Change Request** screens. These fields appear as display only fields in **View Maintenance Change Request** screen.

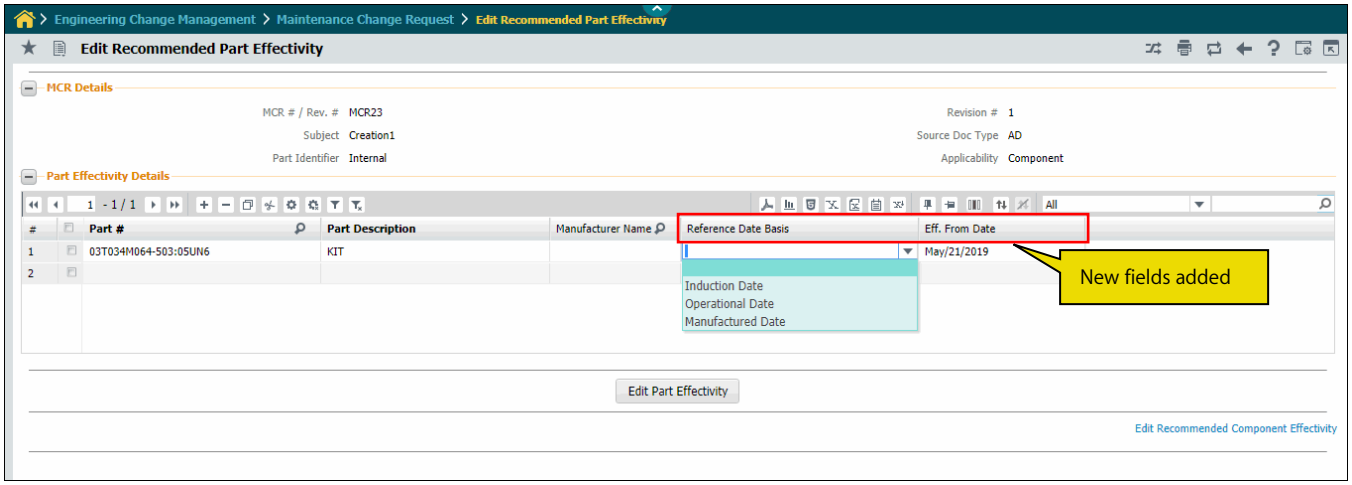
Exhibit 1: Identifies the **Create Maintenance Change Request** screen



Edit Recommended Part Effectivity

Two new fields 'Reference Date Basis' and 'Effective From Date' are added at part level in the "Part Effectivity Details" multiline of the **Edit Recommended Part Effectivity** screen. These fields appear only if the 'Effective From Date' is specified at Maintenance Object Level in MCR. These fields appear as display only fields in **View Recommended Part Effectivity** screen.

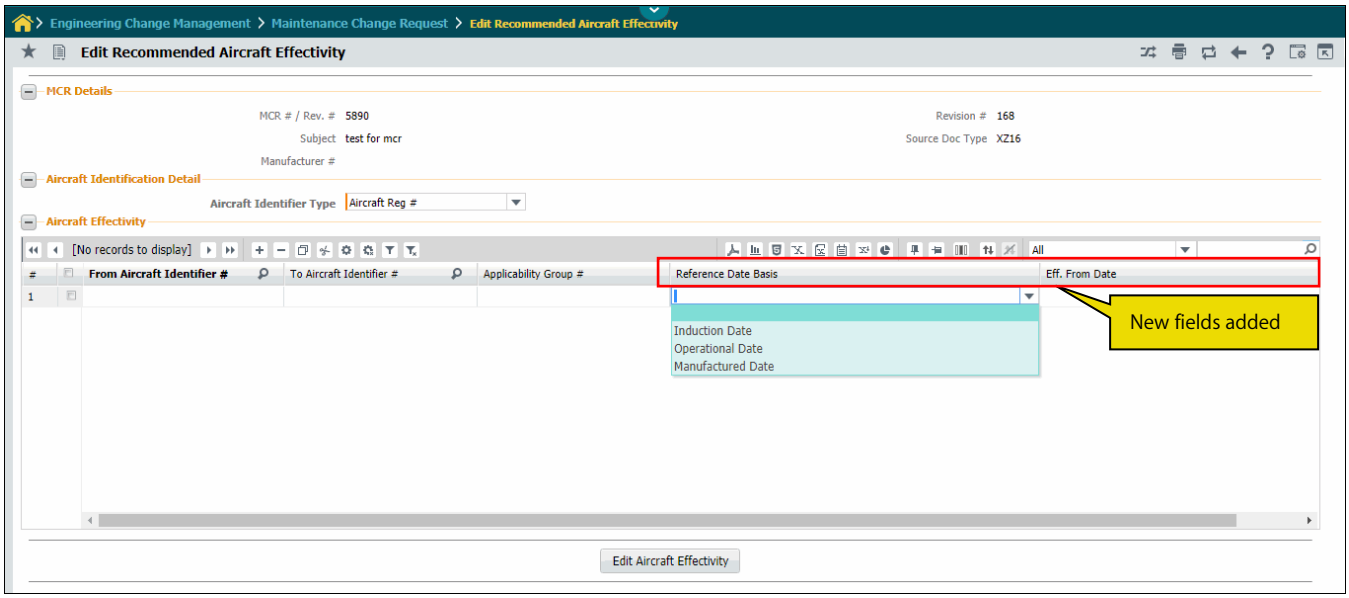
Exhibit 2: Identifies the **Edit Recommended Part Effectivity** screen



Edit Recommended Aircraft Effectivity

Two new fields 'Reference Date Basis' and 'Effective From Date' are added at aircraft level in the "Aircraft Effectivity" multiline of the **Edit Recommended Aircraft Effectivity** screen. These fields appear only if the 'Effective From Date' is specified at Maintenance Object Level in MCR. These fields appear as display only fields in **View Recommended Aircraft Effectivity** screen.

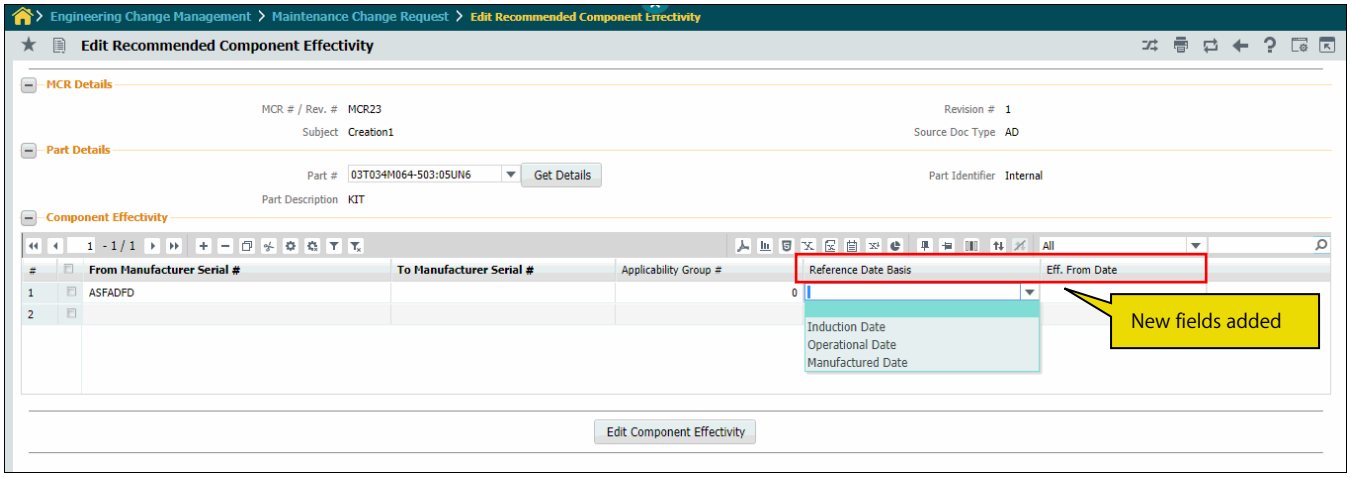
Exhibit 3: Identifies the **Edit Recommended Aircraft Effectivity** screen



Edit Recommended Component Effectivity

Two new fields 'Reference Date Basis' and 'Effective From Date' are added at component level in the "Component Effectivity" multiline of the **Edit Recommended Component Effectivity** screen. These fields appear only if the 'Effective From Date' is specified at Maintenance Object Level in MCR. These fields appear as display only fields in **View Recommended Component Effectivity** screen.

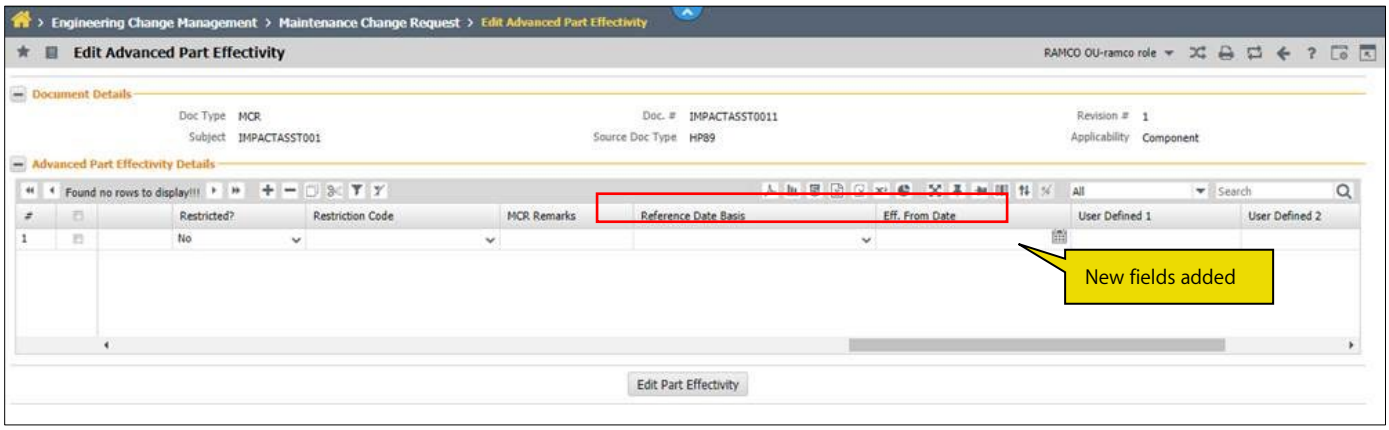
Exhibit 4: Identifies the **Edit Recommended Component Effectivity** screen



Edit Advanced Part Effectivity

Two new fields 'Reference Date Basis' and 'Effective From Date' are added at part level in the "Part Effectivity Details" multiline of the **Edit Advanced Part Effectivity** screen. These fields appear only if the 'Effective From Date' is specified at Maintenance Object Level in MCR. These fields appear as display only fields in **View Advanced Part Effectivity** screen.

Exhibit 5: Identifies the **Edit Advanced Part Effectivity** screen



Engineering Document

Process Change Request

On click of the "Confirm Assessment" pushbutton in the **Process Change Request** screen, if 'Eff. From Date' basis of the MCR is set at "Maint. Obj. Level", then the Ref. From Date basis and Effec. From Date of the Maint. Objects

(Aircraft Model #, Aircraft Reg. #, Part #, Component #) applicable for the corresponding MCR # are saved and inherited to the created Eng. Doc. #.

Manage Engineering Document

A new drop-down field "Eff. From Date" is added in the "Main" tab of the **Manage Eng. Document** screen with the following values:

- Eng. Doc. Level - Effective From Date of the EO is specified at document level.
- Maint. Obj. Level - Effective From Date of the EO is specified at maintenance object level.

On selection of the value 'Eng. Doc. Level', the editable field alongside gets enabled.

On selection of the value 'Maint. Obj. Level', the following fields appear in the "Effectivity Details" multiline (both Serial Range and the Serial Level) in the "Effectivity" tab:

- Reference Date Basis - The Effective From Date of the maintenance Object which could be "Induction Date", "Operational Date" or "Manufactured Date.
- Eff. From Date - The Effective From Date of the maintenance Object.

Note: The 'Effec. From Date' field in the "Schedules" tab will be disabled if the 'Effec. From Date' field in the "Main" tab is selected as 'Maint. Obj. Level'.

Exhibit 6: Identifies the **Manage Eng. Document** screen

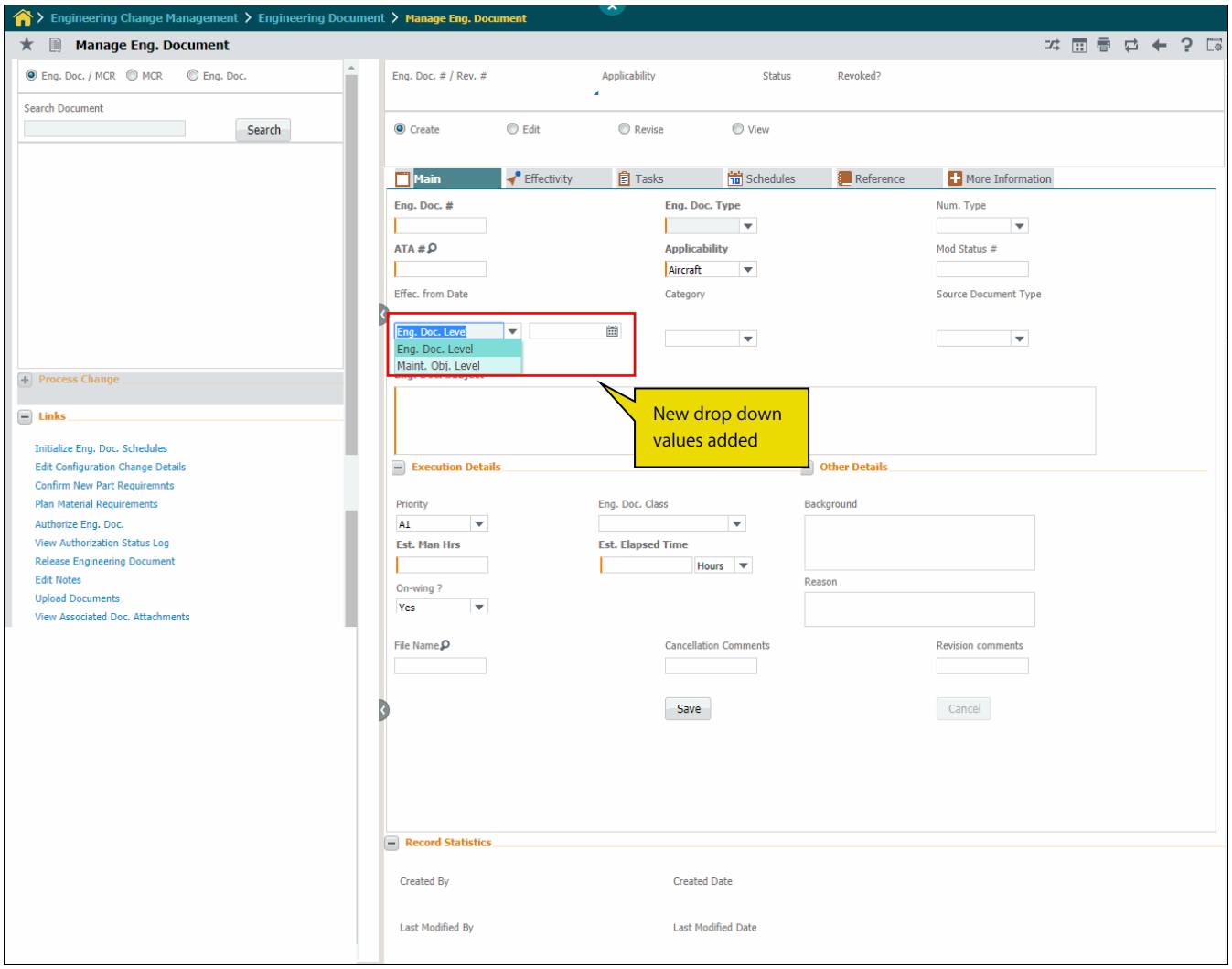
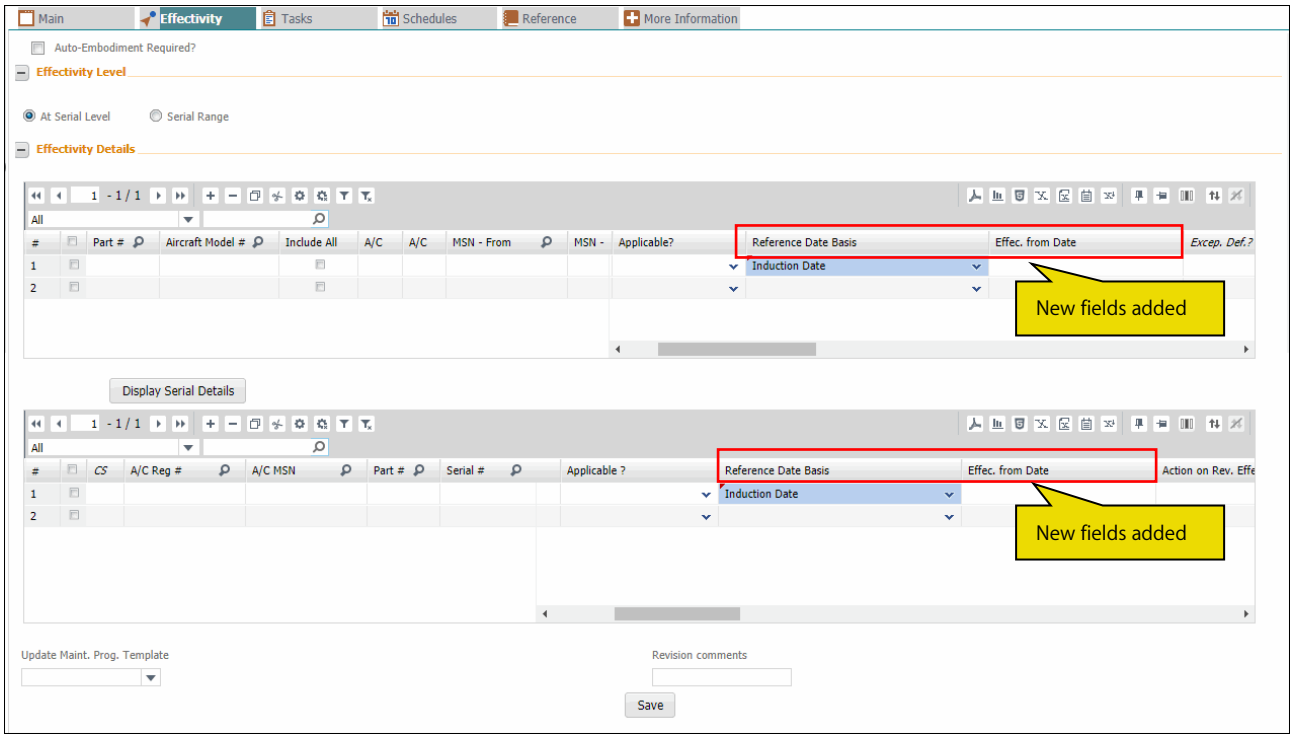


Exhibit 7: Identifies the **Effectivity tab** in **Manage Eng. Document** screen

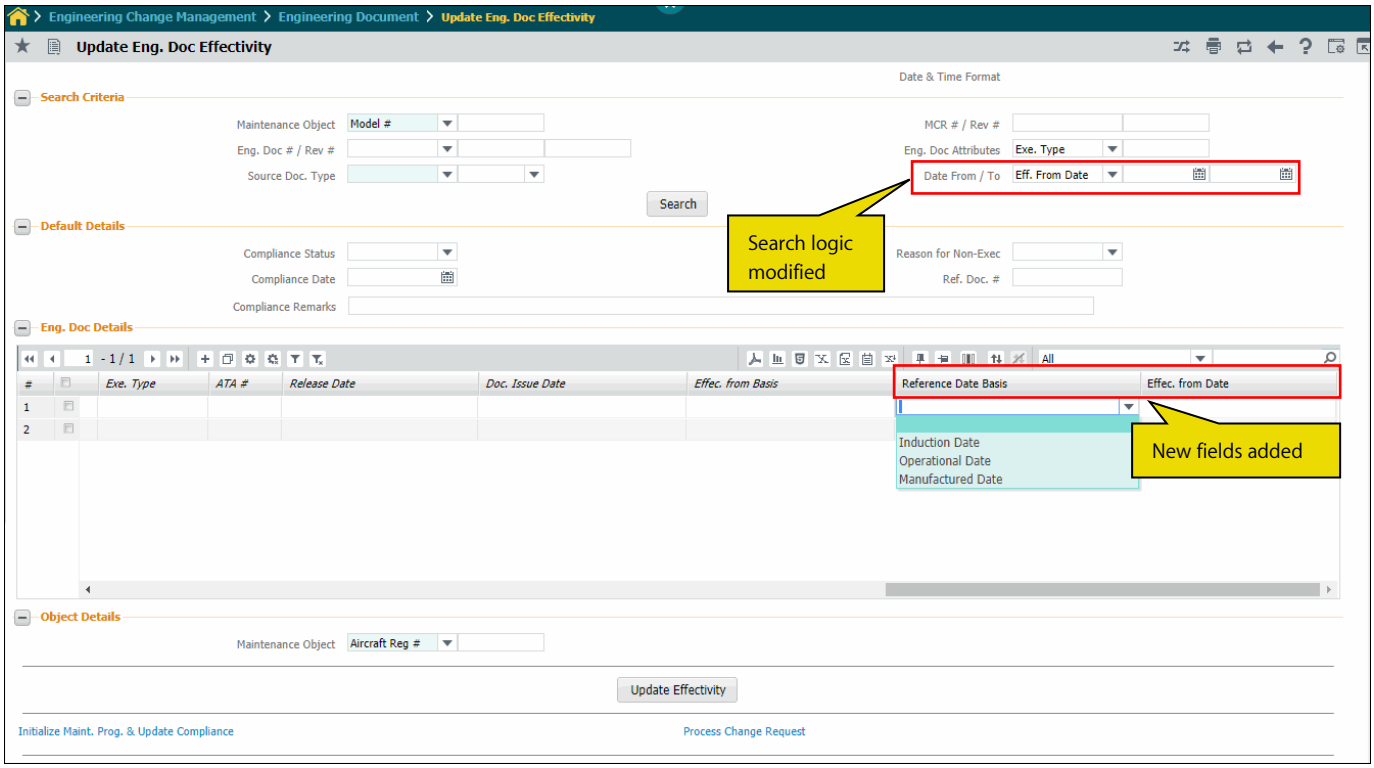


Update Eng. Doc Effectivity

Two new fields 'Reference Date Basis' and 'Effective From Date' are added in the "Eng. Doc. Details" multiline of the **Update Eng. Doc Effectivity** screen. These fields appear only if the 'Effective From Date' is specified at Maintenance Object Level in EO.

The search logic for the 'Date From/To' field 'Effective From' value in the "Search Criteria" section has been modified such that if the Effective From Date of the Maintenance object in an EO falls between the given search values, then that Maintenance Object will be retrieved.

Exhibit 8: Identifies the **Update Eng. Doc Effectivity** screen

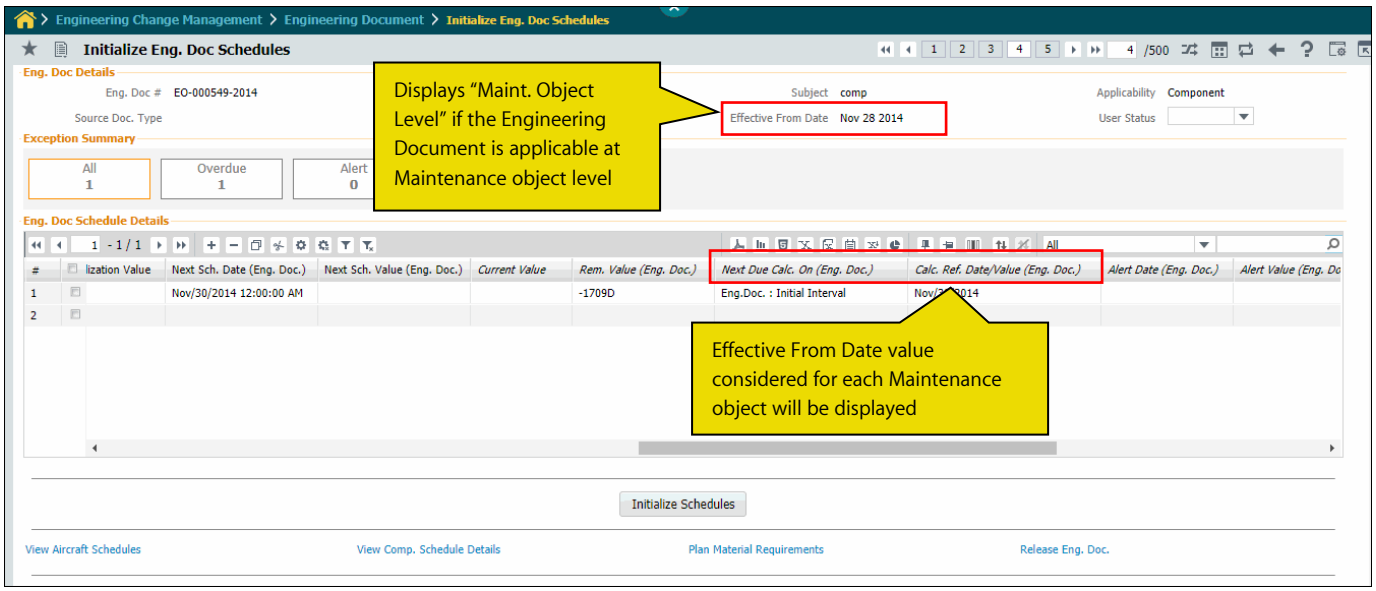


Initialize Eng. Doc Schedules

The 'Effective From Date' field displays the value "Maint. Object Level" if the Engineering Document is applicable at Maintenance object level.

The 'Next Due Calc. On (Eng. Doc.)' and 'Calc. Ref. Date/Value (Eng. Doc.)' fields in the "Eng. Doc Schedule Details" multiline displays the value based on the Effective From Date considered for each Maintenance object.

Exhibit 9: Identifies the **Initialize Eng. Doc Schedules** screen



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Engineering Doc. Compliance Status Report

The search logic for the 'Date From/To' field 'Effective From' value has been modified such that if the Effective From Date of the Maintenance object in an EO falls between the given search values, then that Maintenance Object will be retrieved.

Structural Damage Report

Manage Damage Report

On click of 'Save Repair Details' button when the Eng. Doc. specified under the 'Repair Details' tab has the Eff. From Date basis as 'Maint. Object Level' then the system displays the Eff. From Date value of the Maint. Object for which the Damage Report is being modified in the 'Effective From' field (under the same 'Repair Details' tab).

WHAT'S NEW IN AIRCRAFT MAINTENANCE EXECUTION?

Ability to Mandate Sign Off Comments during Sign Off/Void/Reverse/Reject

Reference: APRP-181

Background

Currently, in Ramco Aviation, recording of sign off comments during signoff, voiding, signoff reversal and signoff rejection for tasks is not mandatory. However, the mechanics / inspectors would want to know the grounds particularly for voiding, rejecting and reversing of sign off against tasks. Hence, a provision to mandate the sign off comments which are akin to future reference for these actions against the tasks must be supported in **AME** and **AME Hub**.

Change Details

To ensure that the mechanics provide sign off comments during sign off, reversal of sign off, voiding of tasks and sub tasks the following developments have been incorporated in **AME** and **AME Hub:**

- New process parameter 'Mandate Sign Off Comments during Void?' has been added under the entity type Package Type and the entity Log Card, User Defined Values in the **Define Process Entities** activity of **Common Master** to mandate the sign off comments during voiding of a task.

Process Parameter: Mandate Sign Off Comments during Void?	
Parameter Value	**Impact on the entry of sign off comments in the Record Sign Off & Work Completion screen**
1 for Yes	The Sign off comments is mandatory for voiding of the task.
0 for No	The Sign off comments is not mandatory for voiding of the task.

- New process parameter 'Mandate Sign Off Comments during Reversal of Sign Off?' has been added under the entity type Package Type and the entity Log Card, User Defined Values in the Define Process Entities activity of Common Master to mandate the sign off comments during reversal of sign off of a task.

Process Parameter: Mandate Sign Off Comments during Reversal of Sign Off?	
Parameter Value	**Impact on the entry of sign off comments in the Record Sign Off & Work Completion and Task tab and Discrepancy tab multilines, Task Actions and Discrepancy Actions windows in the Work Reporting Hub screen**
1 for Yes	The Sign off comments is mandatory for reversal of sign off of the task.
0 for No	The Sign off comments is not mandatory for reversal of sign off of the task.

To ensure that the mechanics provide signoff comments during signoff, reversal of signoff, voiding and rejection of tasks in Shop Work Order, the following new developments have been incorporated in the system:

- New process parameter 'Mandate Sign Off Comments during Sign Off?' has been added under the entity type Shop Work Order Type and the entity User Defined Values in the **Define Process Entities** activity of

Common Master to enforce entry of the sign off comments during sign off of a task.

Process Parameter: Mandate Sign Off Comments during Sign Off?	
Parameter Value	**Impact on the entry of sign off comments in the Record Shop Execution Details screen**
1 for Yes	The Sign off comments is mandatory for sign off of tasks.
0 for No	The Sign off comments is not mandatory for sign off of tasks.

- New process parameter 'Mandate Sign Off Comments during Void?' has been added under the entity type Shop Work Order Type and the entity User Defined Values in the **Define Process Entities** activity of **Common Master** to enforce entry of the sign off comments during voiding of a task.

Process Parameter: Mandate Sign Off Comments during Void?	
Parameter Value	**Impact on the entry of sign off comments in the Record Shop Execution Details screen**
1 for Yes	The Sign off comments is mandatory for voiding tasks.
0 for No	The Sign off comments is not mandatory for voiding tasks.

- New process parameter 'Mandate Sign Off Comments during Reversal of Sign Off?' has been added under the entity type Shop Work Order Type and the entity User Defined Values in the **Define Process Entities** activity of **Common Master** to enforce entry of the sign off comments during reversal of sign off of a task.

Process Parameter: Mandate Sign Off Comments during Reversal of Sign Off?	
Parameter Value	**Impact on the entry of sign off comments in the Record Shop Execution Details screen**
1 for Yes	The Sign off comments is mandatory for reversal of signoff of tasks.
0 for No	The Sign off comments is not mandatory for reversal of signoff of tasks.

- New process parameter 'Mandate Sign Off Comments during Rejection of Sign Off?' has been added under the entity type Shop Work Order Type and the entity User Defined Values in the **Define Process Entities** activity of **Common Master** to enforce entry of the sign off comments during rejection of tasks.

Process Parameter: Mandate Sign Off Comments during Rejection of Sign Off?	
Parameter Value	**Impact on the entry of sign off comments in the Record Shop Execution Details screen**
1 for Yes	The Sign off comments is mandatory for rejection of tasks.
0 for No	The Sign off comments is not mandatory for rejection of tasks.

Exhibit 1: Identifies the changes in the **Record Sign Off & Work Completion** screen from the **Record Aircraft Maintenance Execution Details s**creen

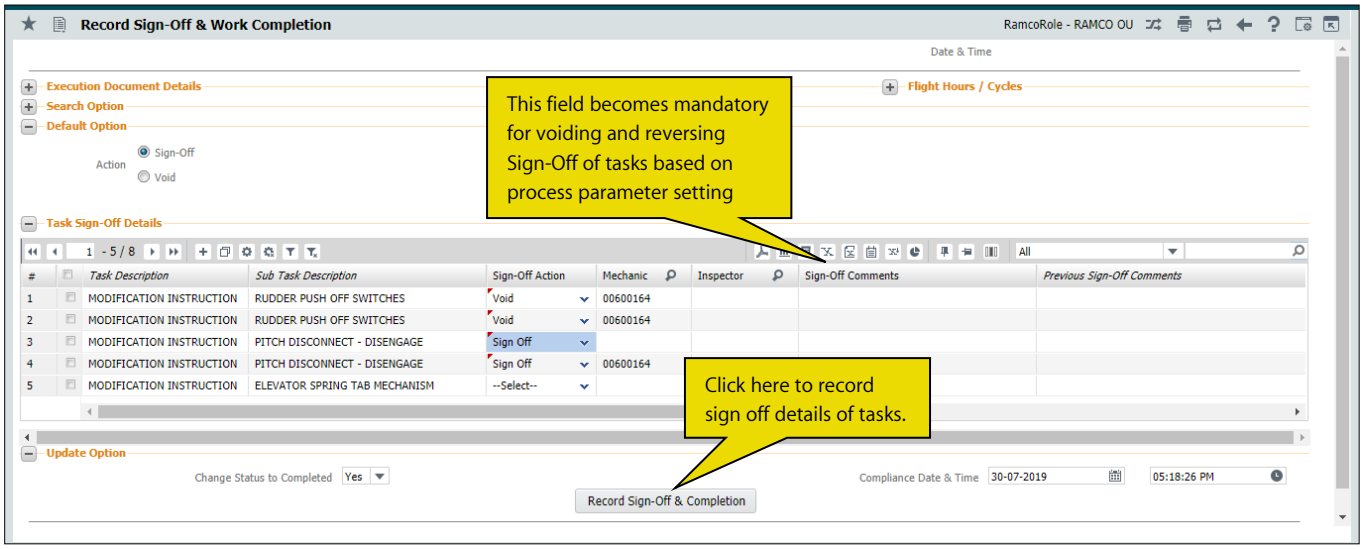
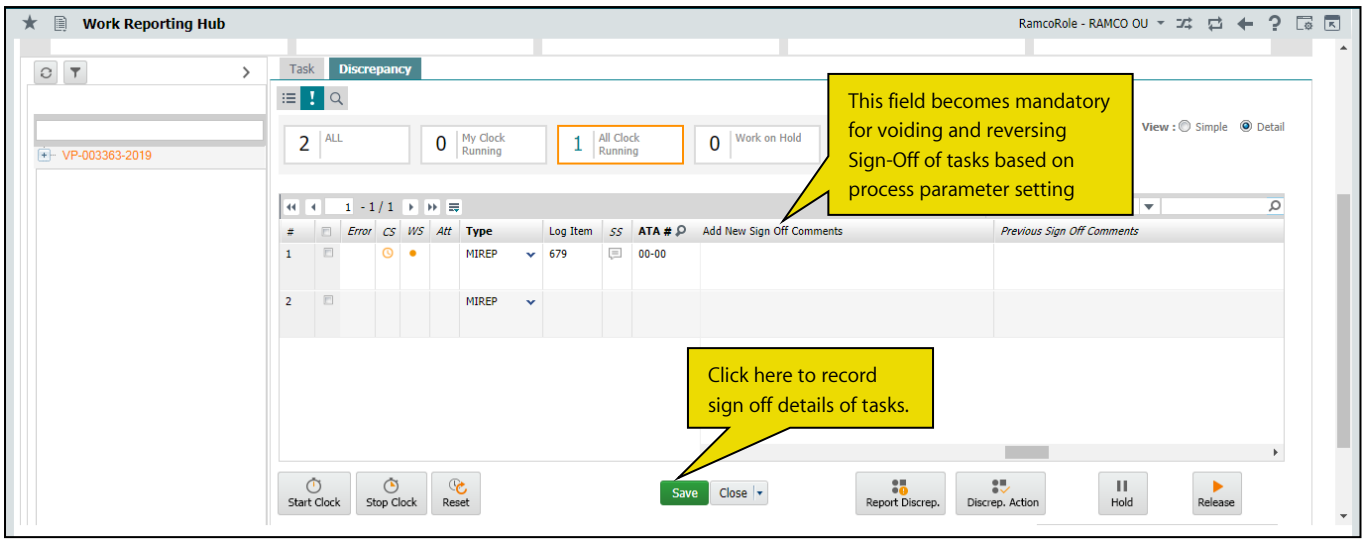


Exhibit 2: Identifies the changes in the **Task** tab of the **Work Reporting Hub s**creen



Ability to provide Subtask Seq # in the Record Sign-Off & Work Completion page

Reference: APRP-180

Background

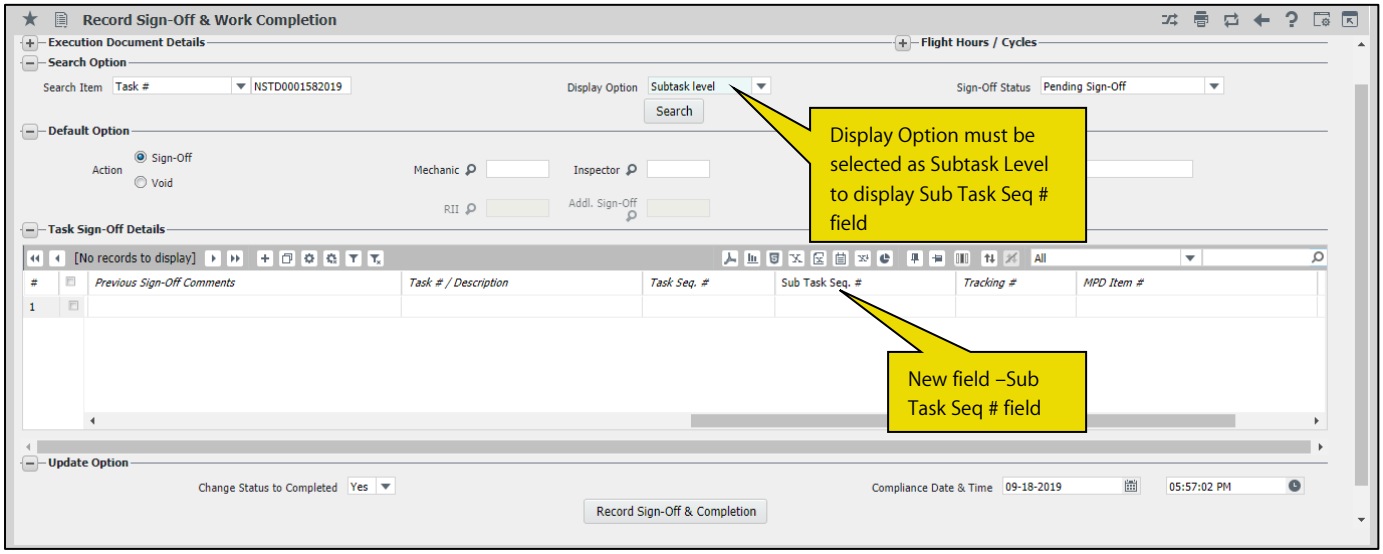
During recording of sign-off and work completion details, the mechanics may want to know the sequence or order for execution of the sub tasks within a task. However, visibility for the sequence # of the sub tasks under tasks is currently not available at the time of sign-off. Cognizance of the sub task sequence # would aid the mechanics / inspectors in seamless maintenance execution and hence must be made available to them.

Change Details

To provide visibility to the sub task sequence #, the following changes have been incorporated in in the **Record Sign-Off and Work Completion** screen. (Note: This screen can be accessed from both the **Record Aircraft Maintenance Executions Details** and **Work Reporting Hub** activities.)

- New display-only field **Sub Task Seq #** has been added in the **Task Sign-Off Details** section of **Record Sign-Off & Work Completion** screen. This field will enable the mechanics to know the order of execution of the sub task within a task. However, this field will be available only if **Display Option** is selected as **Subtask Level**. The field will not be available, if **Display Option** is selected as **Task Level**.

Exhibit 1: Identifies the changes in the **Record Sign-Off and Work Completion** screen



Ability to demarcate any voided sign off when there is a pending sign off and also to show sign off status exclusively for Pending RII

Reference: APRP-178

Background

In Ramco Aviation Aircraft Maintenance, a task / sub task can have any combination of Mechanic, Inspector and RII for Sign Off requirements. On sign off by each resource group, the sign off status changes to reflect the updated status of the task. For example, once the mechanic has signed off a task with requirement as Mechanic and Inspector, Sign Off Status becomes Pending Inspector. If both Mechanic and Inspector have signed off a task, the sign off status becomes Signed Off. However, in scenarios of Voided sign offs and Pending RII sign offs, the sign off status of tasks does not reflect the actual situation. Currently, if the Mechanic has voided sign off, the sign off status is displayed Pending Inspector for tasks requiring Mechanic and Inspector Sign Off. In such circumstances, the resource group that signs off the task subsequently will not be aware of the voiding of the task by the preceding resource group. Further, whenever RII sign off is pending for a task, the sign off status is displayed as Pending Inspector and thus no distinction is made between pending Inspector and RII Sign Off. Hence, it is required that the Sign Off Status attribute for a task must provide unambiguous information on the real time / changed sign off status of tasks for enhanced maintenance execution.

Change Details

To derive and display actual Sign-Off Status for sub tasks that indicates sign off or voiding by specific resource groups, the following changes have been carried out as part of the enhancement.

- The **Sign Off Status** fields in the **Task** And **Discrepancy** tab multilines in the **Work Reporting Hub** and the **Record Sign-Off and Work Completion** screens will now display values that reflect the real time Sign Off Status of tasks as illustrated in the following table.

Scenario: 1 Pending RII

Type	Sign Off Requirement	Mechanic	Inspector	RII	Sign Off Status As Is	Sign Off Status To Be
Tasks Pending RII Sign Off	RII			Pending	Pending Inspector	Pending RII
	Mechanic and RII	Pending		Pending	Pending Mech&Insp	Pending Mech&RII
	Mechanic and RII	Fully Signed Off		Pending	Pending Inspector	Pending RII
	Inspector and RII		Pending	Pending	Pending Inspector	Pending Insp&RII
	Inspector and RII		Fully Signed Off	Pending	Pending Inspector	Pending RII
	Mechanic, Inspector & RII	Pending	Pending	Pending	Pending Mech&Insp	Pending Mech,Insp&RII

	Mechanic, Inspector & RII	Fully Signed Off	Pending	Pending	Pending Inspector	Pending Insp&RII
	Mechanic, Inspector & RII	Fully Signed Off	Fully Signed Off	Pending	Pending Inspector	Pending RII
	Mechanic, Inspector & RII	Fully Signed Off	Fully Signed Off	Fully Signed Off	Signed Off	Signed Off

Scenario: 2 Fully Voided Sign Off display

Type	Sign Off Requirement	Mechanic	Inspector	RII	Sign Off Status Existing	Sign Off Status After Enhancement
Only Some Fully Voided with Pending Sign Off	Mechanic and Inspector	Fully Voided	Pending		Pending Inspector	Pending Insp (Mech Voided)
	Mechanic and RII	Fully Voided		Pending	Pending Inspector	Pending RII (Mech Voided)
	Inspector and RII		Fully Voided	Pending	Pending Inspector	Pending RII (Insp Voided)
	Mechanic, Inspector & RII	Fully Voided	Pending	Pending	Pending Inspector	Pending Insp&RII (Mech Voided)
	Mechanic, Inspector & RII	Fully Voided	Fully Voided	Pending	Pending Inspector	Pending RII (Mech&Insp Voided)
All Tasks Fully Voided and NO Pending Sign Off	Mechanic and Inspector	Fully Voided	Fully Voided		Signed Off	Signed Off (Voided)
	Mechanic and RII	Fully Voided		Fully Voided	Signed Off	Signed Off (Voided)
	Inspector and RII		Fully Voided	Fully Voided	Signed Off	Signed Off (Voided)
	Mechanic, Inspector & RII	Fully Voided	Fully Voided	Fully Voided	Signed Off	Signed Off (Voided)
Some Tasks Fully Voided and Some Signed Off	Mechanic and Inspector	Signed Off	Fully Voided		Signed Off	Signed Off
	Mechanic and RII	Signed Off		Fully Voided	Signed Off	Signed Off
	Inspector and RII		Signed Off	Fully Voided	Signed Off	Signed Off
	Mechanic, Inspector & RII	Signed Off	Signed Off	Fully Voided	Signed Off	Signed Off
	Mechanic, Inspector & RII	Signed Off	Fully Voided	Fully Voided	Signed Off	Signed Off
	Mechanic and Inspector	Signed Off	Signed Off		Signed Off	Signed Off
	Mechanic and RII	Fully Voided		Signed Off	Signed Off	Signed Off
	Inspector and RII		Fully Voided	Signed Off	Signed Off	Signed Off
	Mechanic, Inspector & RII	Fully Voided	Fully Voided	Signed Off	Signed Off	Signed Off

Scenario: 3 Partially Voided Sign Off display

Type	Sign Off Requirement	Mechanic	Inspector	RII	Sign Off Status As Is	Sign Off Status To Be
Some Partially Voided and Some Pending Sign Off	Mechanic and Inspector	Partially Voided	Pending		Pending Mech&Insp	Pending Mech&Insp
	Mechanic and RII	Partially Voided		Pending	Pending Mech&Insp	Pending Mech&RII
	Inspector and RII		Partially Voided	Pending	Pending Inspector	Pending Insp&RII
	Mechanic, Inspector & RII	Partially Voided	Pending	Pending	Pending Mech&Insp	Pending Mech,Insp&RII
	Mechanic, Inspector & RII	Partially Voided	Partially Voided	Pending	Pending Mech&Insp	Pending Mech,Insp&RII
All Partially Voided	Mechanic and Inspector	Partially Voided	Partially Voided		Pending Mech&Insp	Pending Mech&Insp
	Mechanic and RII	Partially Voided		Partially Voided	Pending Mechanic	Pending Mech&RII
	Inspector and RII		Partially Voided	Partially Voided	Pending Inspector	Pending Insp&RII
	Mechanic, Inspector & RII	Partially Voided	Pending	Partially Voided	Pending Mech&Insp	Pending Mech,Insp&RII
	Mechanic, Inspector & RII	Partially Voided	Partially Voided	Partially Voided	Pending Mech&Insp	Pending Mech,Insp&RII
Some Signed Off and Some Partially Voided	Mechanic and Inspector	Signed Off	Partially Voided		Pending Inspector	No Change
	Mechanic and RII	Signed Off		Partially Voided	Pending Inspector	Pending RII
	Inspector and RII		Signed Off	Partially Voided	Pending Inspector	Pending RII
	Mechanic, Inspector & RII	Signed Off	Signed Off	Partially Voided	Pending Inspector	Pending RII

Note: *Pending can be Partial/Fully Pending (even if one of the subtask(s) of a resource group is pending then the entire resource group is considered as pending for that task)*

Exhibit 1: Identifies changes in the **Task** tab in the **Work Reporting Hub** screen

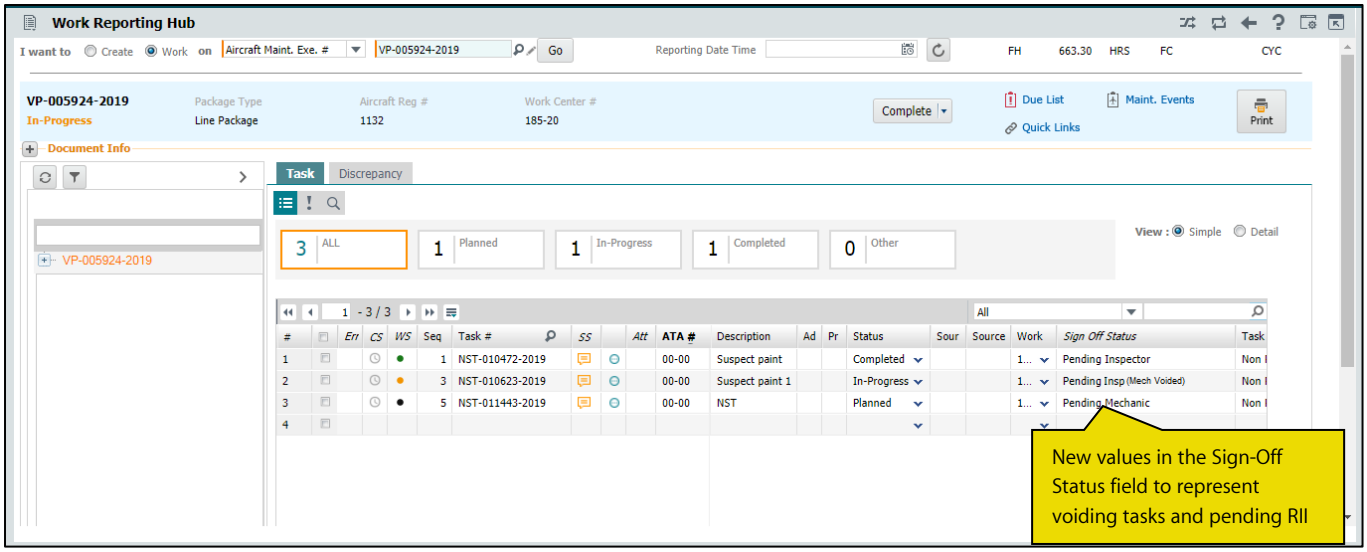
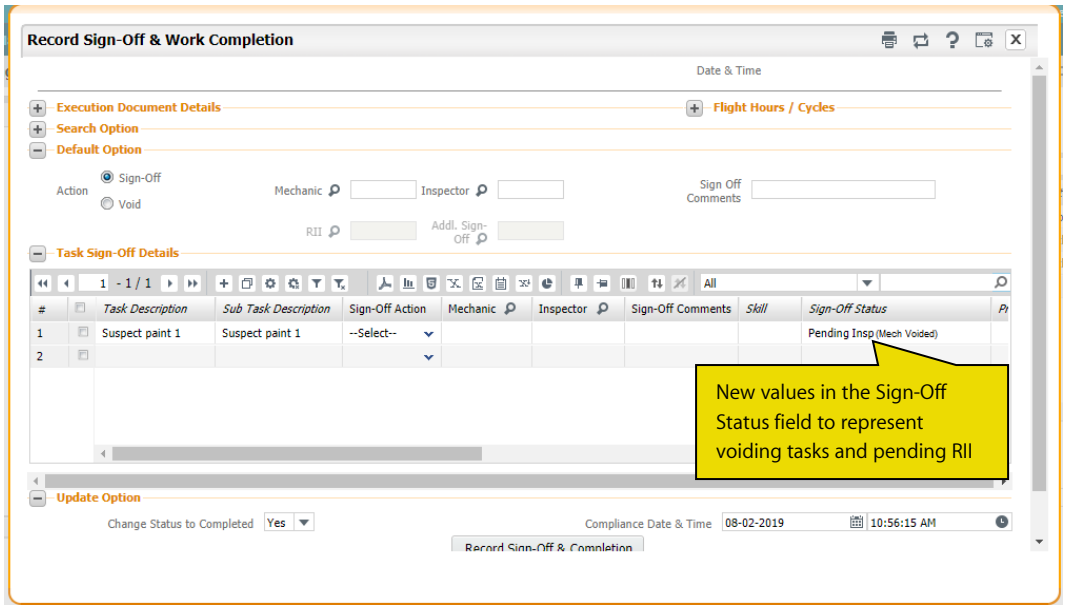


Exhibit 2: Identifies changes in the **Record Sign-Off and Work Completion** screen



Ability to provide Customer Ref. # in Edit Package Additional Information screen and push it to the Customer Order

Reference: APRP-742

Background

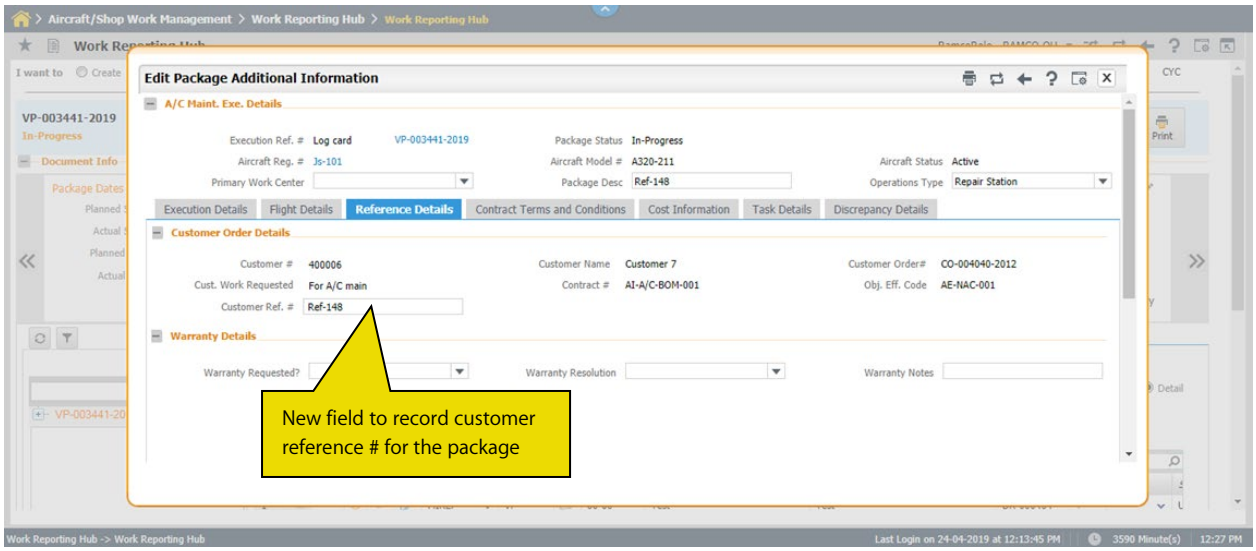
In **AME Hub**, upon closure of a package that is based on a customer order, the work package details are copied to the customer order. This is done to facilitate invoicing of the customer order. Hence, a provision is required to capture the Customer Reference # as received from the customer at the package level, which in turn will be automatically pushed to the customer order on package closure.

Change Details

To enable the capture of customer reference details for a package that is based on a customer order, the following new developments have been incorporated in the **Work Reporting** screen of **AME Hub**:

- New input field **Customer Ref. #** has been added under the **Customer Order Details** section of **Reference Details** tab in the **Edit Package Additional Information** popup to capture the customer reference of the customer work order for the package.
- On closure of the package, the value from the **Customer Ref. #** field will be copied to the customer order # based on which the package was created and executed.

Exhibit 1: Identifies changes in the **Edit Package Additional Information** popup



Ability to capture Maint. Manual Ref. # in Work Reporting Hub, Edit Package Additional Information and Plan Work Order for Non Standard Tasks and view for Standard Tasks

Reference: APRP-170

Background

In Aircraft Maintenance, the technicians refer to **Maint. Manual Ref. #** of task to know the MMD reference of the task. For standard tasks, **Maint. Manual Ref. #** is captured in the **Maintenance Task** business component. A provision record **Maint. Manual Ref. #** for the Non-Standard tasks at the time of creation is required in the **Work Reporting Hub, Edit Package Additional Information** and **Plan Work Order** screens.

Currently, visibility for **Maint. Manual Ref. #** for the Standard tasks is provided only in the **View Task Details** page. Further, it would facilitate the mechanics, if **Maint. Manual Ref. #** for all tasks (both Standard and Non-Standard) is retrieved and displayed during planning / creating packages.

Change Details

To enable the capture of **Maint. Manual Ref. #** for the new Non-Standard tasks at the time of creation and, the display of the **Maint. Manual Ref. #** for all tasks, the **Maint. Manual Ref. #** input field has been added in the following screens:

- **Task Details** tab of the **Edit Package Additional Information** screen
- **Task Details** multiline in the **Plan Work Order** screen
- **Task** tab multiline in the **Work Reporting Hub** screen

Exhibit 1: Identifies changes in the **Task** tab of the **Aircraft Work Reporting Hub** screen

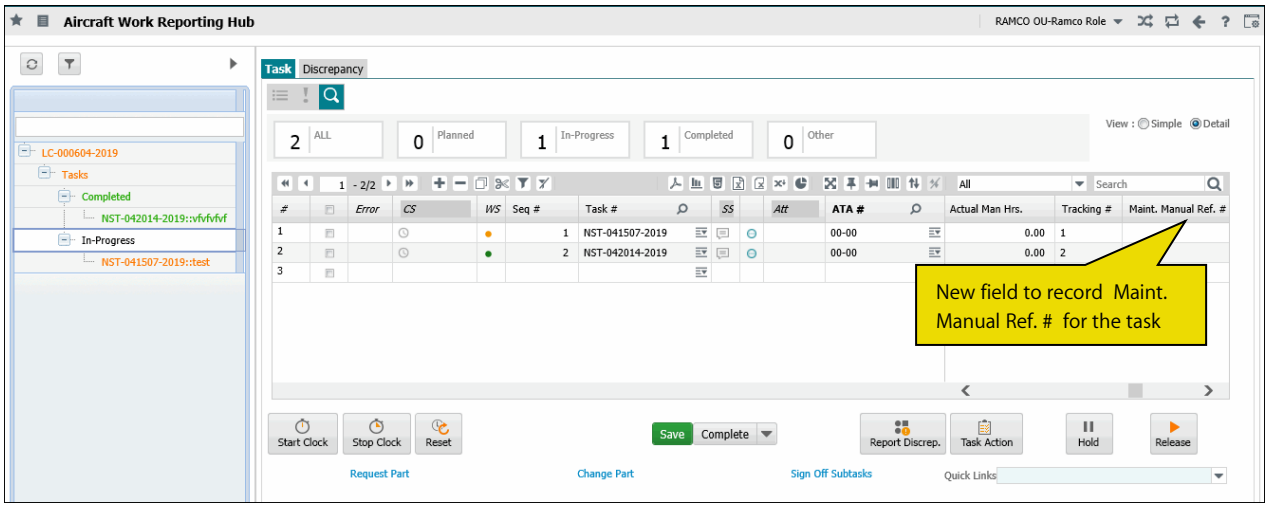


Exhibit 2: Identifies changes in the **Edit Package Additional Information** screen

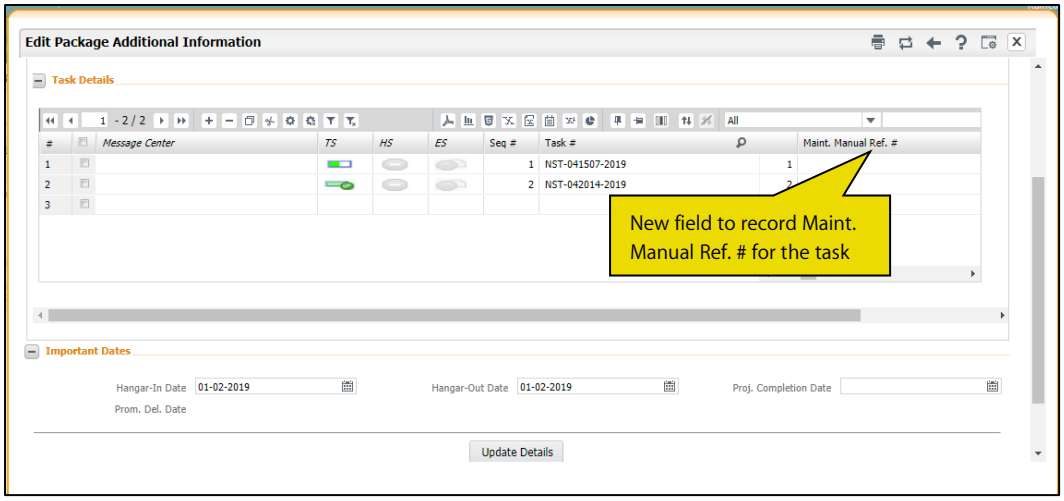
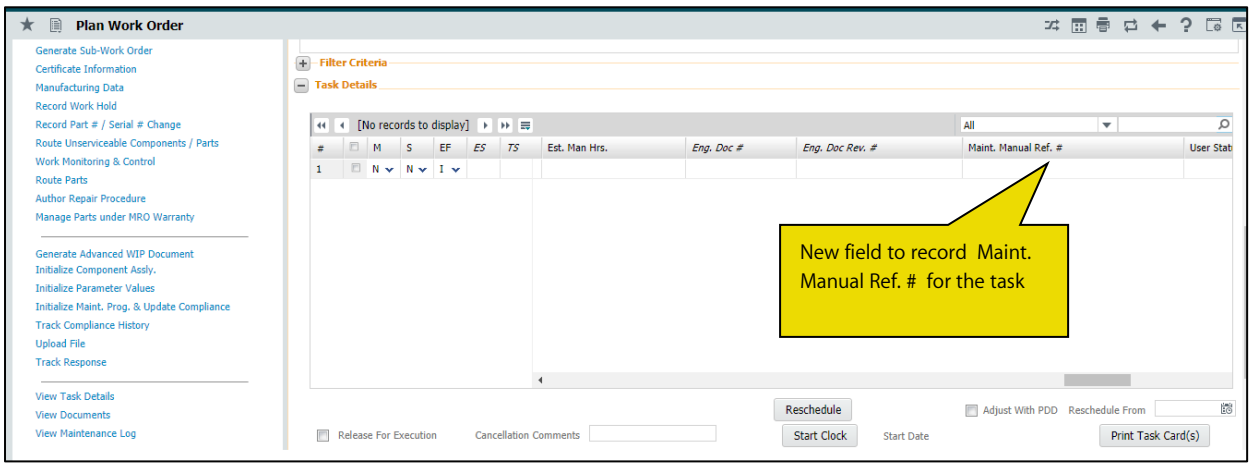


Exhibit 3: Identifies changes in the **Plan Work Order** screen



Ability to Display Actual Man Hours as Zero if Time booking is not done

Reference: APRP-522

Background

Currently, on completion of tasks / closure of discrepancies, the system derives Actual Man Hours by summing up all the time booked against the task / discrepancy by the respective employees. And if no time booking has happened against these tasks / discrepancies, Actual Man Hours is deemed to be the difference between Actual End Time and Actual Start Time of the task. However, such means of deriving Actual Man Hours is not always recommended as some tasks remain in the 'In-Progress' status for multiple days due to delays / deferment before they are quickly completed / closed. Hence, a provision is required to set Actual Man Hours of tasks / discrepancies against which no time booking has taken place as '0' on completion / closure.

Change Details

To enable 'Zero' time booking of tasks, the following new development have been incorporated in the system as part of this enhancement.

- New process parameter 'Calculate Actual Man Hours as the difference between the Actual End Time and Actual Start Time if no timesheet has been booked?' has been added under the entity type **Package Type** and the entity **All user defined package types including Log Card** in the **Define Process Entities** activity of **Common Master** to automatically set Actual Man hours as '0' for tasks on completion / discrepancies on closure, if no time booking is found against them. The below table illustrates the functionality of the process parameter.

Process Parameter: Calculate Actual Man Hours as the difference between the Actual End Time and Actual Start Time if no timesheet has been booked?	
Value	**Derivation of Actual Man Hours of Tasks/Discrepancies if time booking has not been done**
0 for Not Required	Actual Man Hours = 0
1 for Required	Actual Man Hours = Actual End Time - Actual Start Time

The system computes **Actual Man Hours** based on the value of the process '**Calculate Actual Man Hours as the difference between the Actual End Time and Actual Start Time if no timesheet has been booked?**' in the below-listed scenarios:

- On completion of a task / on closure of a discrepancy in the **Record Aircraft Maintenance Execution Details** screen of **Aircraft Maintenance Execution**
- On completion of a task / on closure of a discrepancy in the **Aircraft Work Reporting Hub** screen of **Aircraft Execution Hub**
- On completion of a task in the **Manage Work Assignments and Reporting** screen in **Work Monitoring and Control**
- On completion of a task in the **eLog/Task Card Details** and on closure of a discrepancy in the **eLog/Discrepancy Card** screens of **MechanicAnywhere**

Ability to reverse a NCR in AME page for Lot controlled parts

Reference: APRP-543

Background

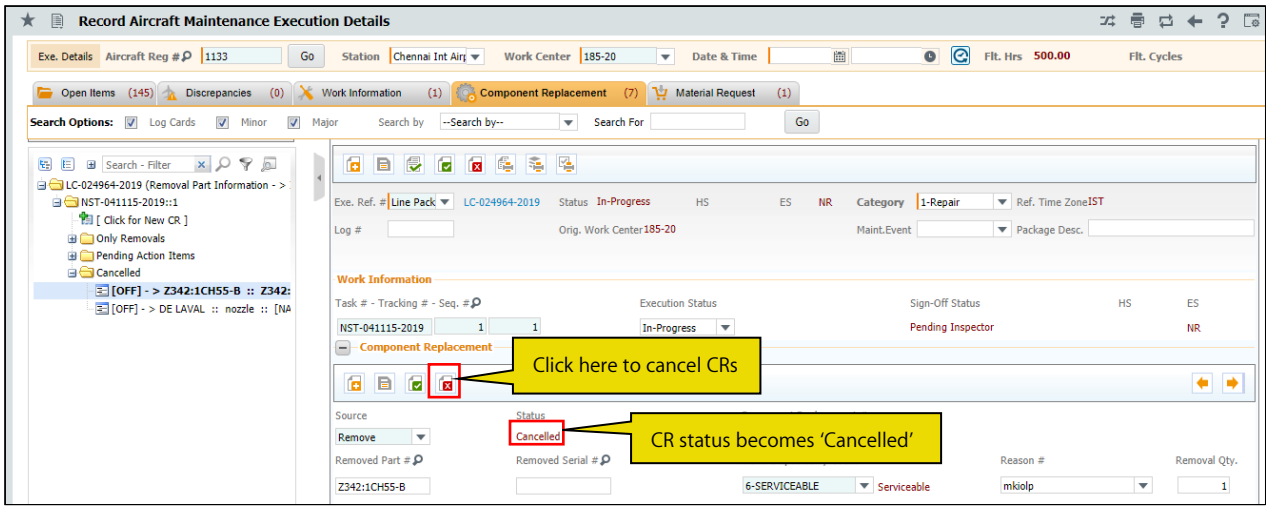
In **Aircraft Maintenance Execution**, the component replacements involving Lot-Controlled parts typically tend to encounter multiple errors. Currently, the users are allowed to cancel 'Fresh' component replacements though 'Confirmed' component replacements cannot be cancelled. The only means of rectification of these errors as cancellation of the 'Confirmed' component replacements is not doable is returning / reconciling the parts. However, the mechanics find the returning and reconciling process difficult and tedious. Hence, a provision to allow cancellation of 'Confirmed 'component replacements of Lot-Controlled parts in the **Record Aircraft Maintenance Execution Details** screen is required to avoid generation / rectification of errors.

Change Details

To prevent errors arising out of faulty component replacements, the following changes have been undertaken in the **Aircraft Maintenance Execution** business component.

- The mechanics will now be able to cancel the 'Confirmed' component replacements in the **Record Aircraft Maintenance Execution Details** screen by clicking on the  icon in the Component Replacement section, if :
    - Involved part is Lot-Controlled
    - Object Type is "Other Parts"
    - No CWO / Repair Order generated yet
    - No Stock Return generated in Confirmed status
- The status of such component replacements will change to 'Cancelled' and, such cancelled records will appear in a new tree folder called 'Cancelled' in the above-said screen
- Any pending returns for the removed Lot-Controlled parts (retrieved n the **Return Cores** tab of the **Record Part Consumption & Return** page) will be deleted / knocked off on cancellation

Exhibit 1: The **Record Aircraft Execution Details** screen in **Aircraft Maintenance Execution**



Ability to prevent Mechanic from Reverting Inspector Sign Off

Reference: APRP-209

Background

In **Ramco Aviation**, currently, the mechanics are allowed to reverse inspector sign off first and then reverse their own sign off. However, this could lead to sign off issues. Therefore, a provision is required wherein users with Resource Group as Mechanic must be permitted to reverse only mechanic sign off.

Change Details

A new validation is introduced to prevent the reverting of inspector sign off by an employee belonging to Resource Group as Mechanic.

WHAT'S NEW IN RELIABILITY MANAGEMENT?

Ability to define Reliability Process Parameters

APRP-193

Background

Reliability analysis for components may include MTBUR/URR analysis, Low Time removals, No fault found and many more. Each of these assessments may have varying attributes which are involved in their value computation and analysis.

A common Reliability process parameters screen is developed with set of parameters to identify the Reliability assessments and variables required for their computations. The parameters cover the following:

1. Formulae involved in MTBUR analysis varies within an organization with respect to the operator. So, there is a need to set the process parameters and map them to reliability fleet based on the requirements.
2. Necessity to perform Low Time Removals analysis or No fault found at Part and component levels
3. Also capture some additional assessments which can be newly configured, such as:
    - Mandatory Occurrence Report
    - Incident Occurrence Report

Change Details

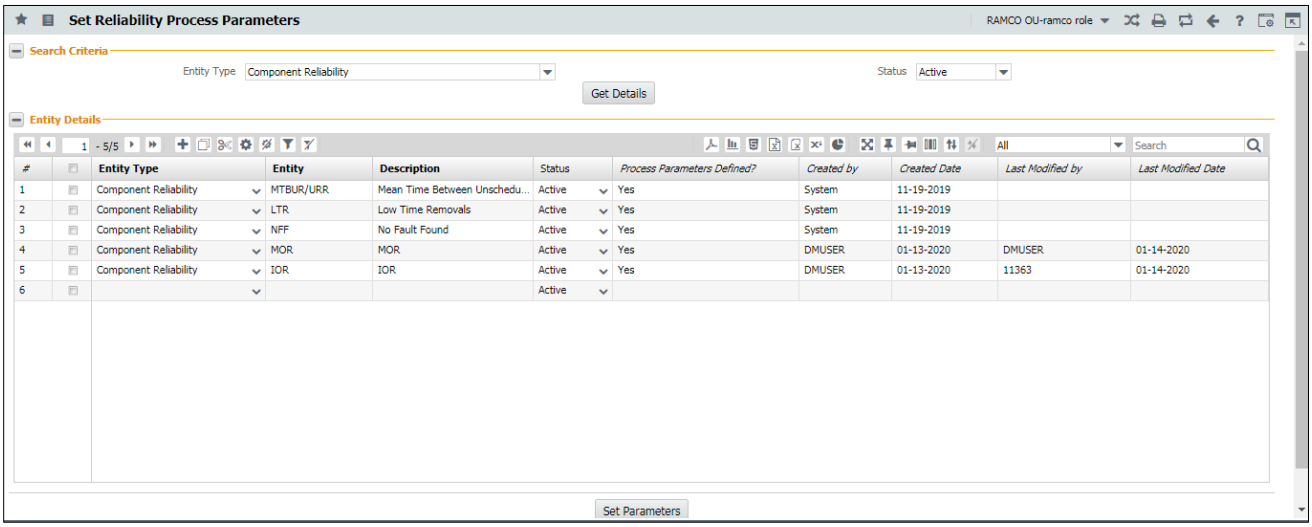
This enhancement involves introduction of two new screens:

1. Set Reliability Process Parameters
2. Set Process Parameters

Set Reliability Process Parameters

The screen is designed to work much similar to any of the other Process parameters available in application today. The 'Set Reliability Process Parameters' screen is designated to help user create new component reliability assessment flags such as Mandatory Occurrence Report & Incidence Occurrence Report. A quick link to 'Set Process Parameters' will list all possible variables that can be configured against each of the assessments, beginning with MTBUR/URR.

Exhibit 1: Identifies the **Set Reliability Process Parameters** screen.



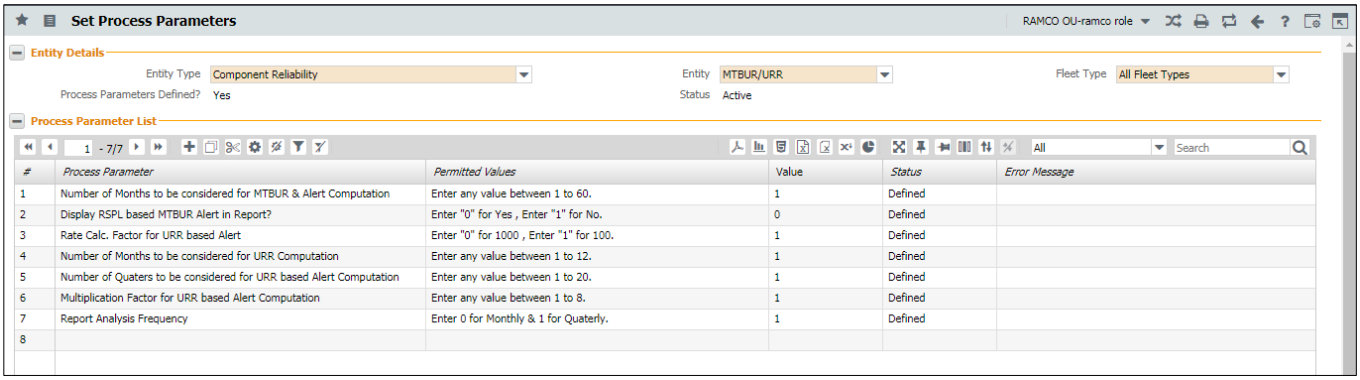
Set Process Parameters

Unlike the usual **Set Process Parameters** screen, in this screen user can specify the Fleet Type to which the Process parameters are applicable. Considering parameters for MTBUR/URR, the user can set computation based on various factors like:

- Number of Months to be considered for MTBUR & Alert Computation
- Display RSPL based MTBUR Alert in Report?
- Rate Calc. Factor for URR based Alert
- Number of Months to be considered for URR Computation
- Number of Quarters to be considered for URR based Alert Computation
- Multiplication Factor for URR based Alert Computation
- Report Analysis Frequency

Based on the above mentioned process parameters MTBUR/URR analysis can be made.

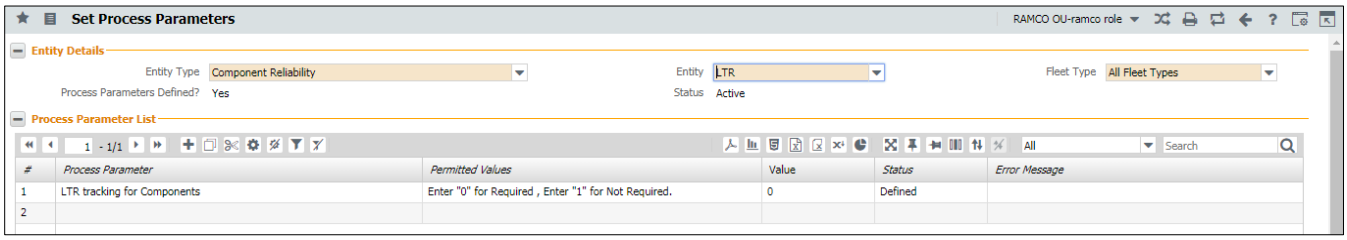
Exhibit 2: Identifies the **Set Process Parameters** screen with Entity 'MTBUR/URR'.



Next considering LTR, the user can set computation based on the factor,

- LTR tracking for Components

Exhibit 3: Identifies the **Set Process Parameters** screen with Entity 'LTR'.

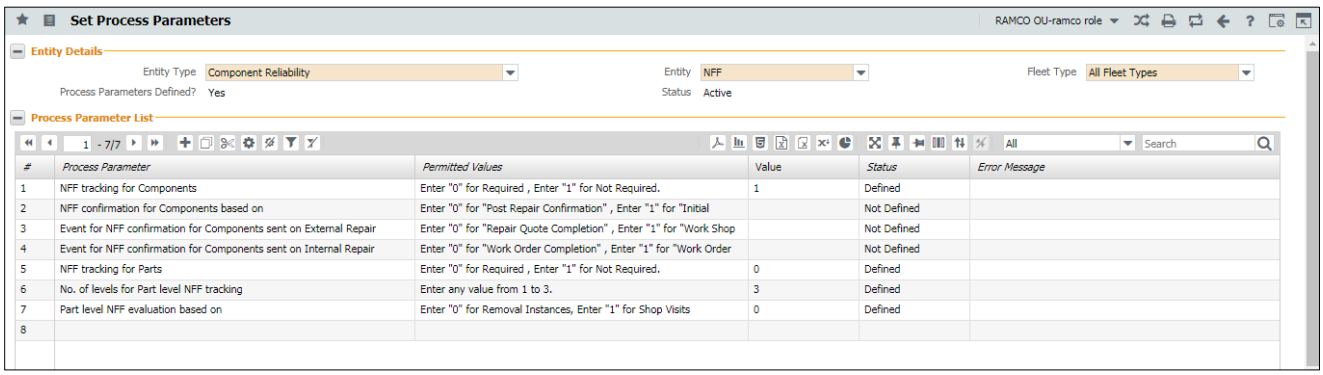


For NFF, the user can set computation based on various factors like:

- NFF tracking for Components
- NFF confirmation for Components based on
- Event for NFF confirmation for Components sent on External Repair
- Event for NFF confirmation for Components sent on Internal Repair
- NFF tracking for Parts
- No. of levels for Part level NFF tracking
- Part level NFF evaluation

Based on the above mentioned process parameters, MTBUR/URR analysis can be made.

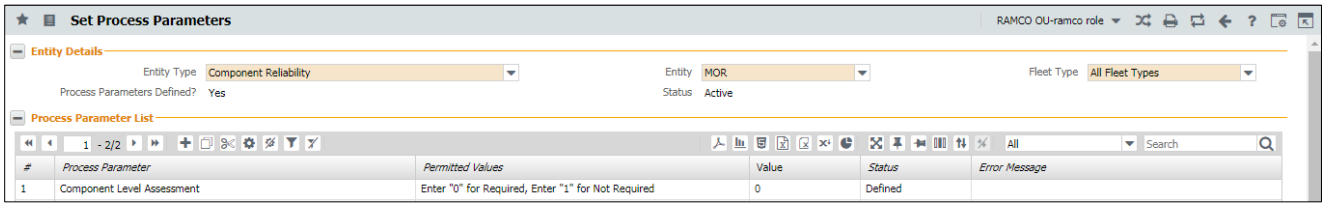
Exhibit 4: Identifies the **Set Process Parameters** screen with Entity 'NFF'.



Similarly for every user defined component assessment flag, user can set the need to consider this assessment during the analysis with the following parameter:

- Component Level Assessment

Exhibit 5: Identifies the **Set Process Parameters** screen for the parameter 'Component Level Assessment'.



The above mentioned UI can be launched from **Reliability Management** > **Reliability Setup** > **Set Process Parameters**.

Ability to display and edit Component Removal Information and Aircraft Utilization Information

APRP-246

Background

Reliability Analysis involves a number a reports to be run on a monthly basis for assessments such as No Fault Found, Low Time Removals, MOR / IOR, MTBUR / URR etc. Basic data utilized for the above mentioned assessments come from the removal information wherein the components will be tagged as unscheduled removals and potential NFFs or LTRs or MOR/IOR. Though the removal information will carry all required information, there is still a need to review this information before running the necessary reports and make any corrections, wherever necessary. Similarly, yet another data required is the Aircraft utilization parameters for a given month. The data can either be available within the system or may be uploaded based on Customer's inputs. So, there is another need to input the utilization data manually for Reliability Analysis, if there is a delay from customer for providing the actual utilization values. Once, the actual data utilization information for aircraft are received and if the component removal information are reviewed, there is a need to base-line the data before publishing the reports. Reports can be published, only if the actual utilization data for aircrafts has been received and base-lined.

Change Details

This enhancement involves introduction of two new UI's under the business component **Reliability Analysis**:

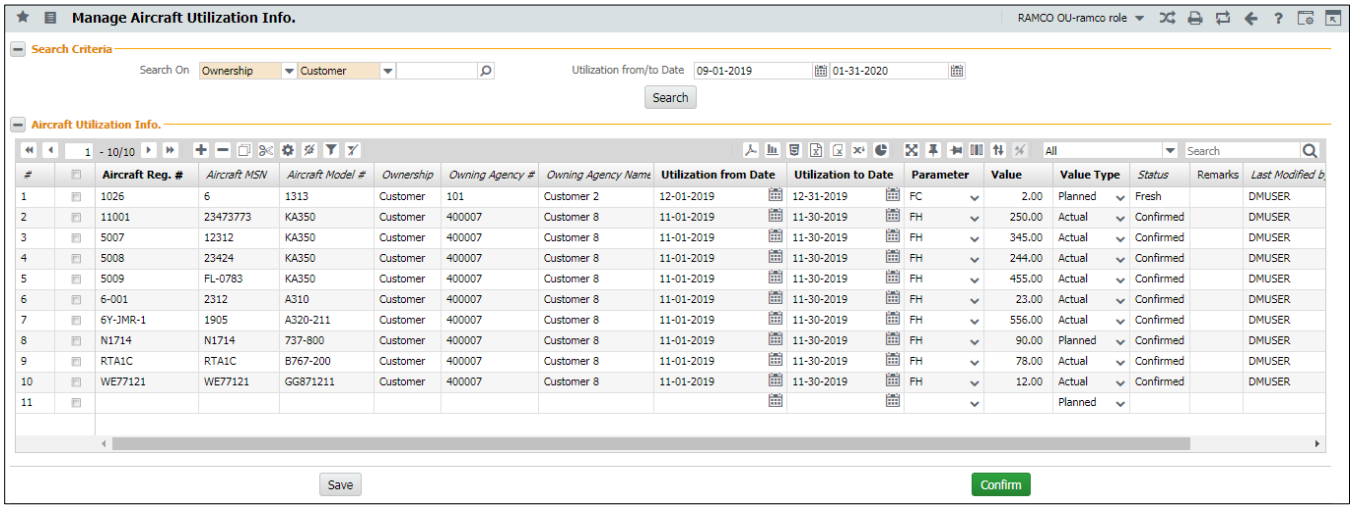
1. Manage Aircraft Utilization Info.
2. Manage Component Removal Info.

Manage Aircraft Utilization Info.

The screen is intended to capture the monthly utilization of Aircrafts. This information must currently be manually entered to the system and will not derive the utilization automatically. It is assumed that the information will be available to the user from respective Customers. In case of a delay in receiving the information from a customer, users are given a provision to set a 'Planned' value against the column 'Value Type', which they may arrive at based on previous month utilizations, and simulate the necessary reports. The Planned value will only support for simulating the reports but it is mandatory to input the Actual value and confirm the details for being able to publish the final reports.

The details entered must be mandatorily confirmed prior to report generation.

Exhibit 1: Identifies the **Manage Aircraft Utilization** Info screen



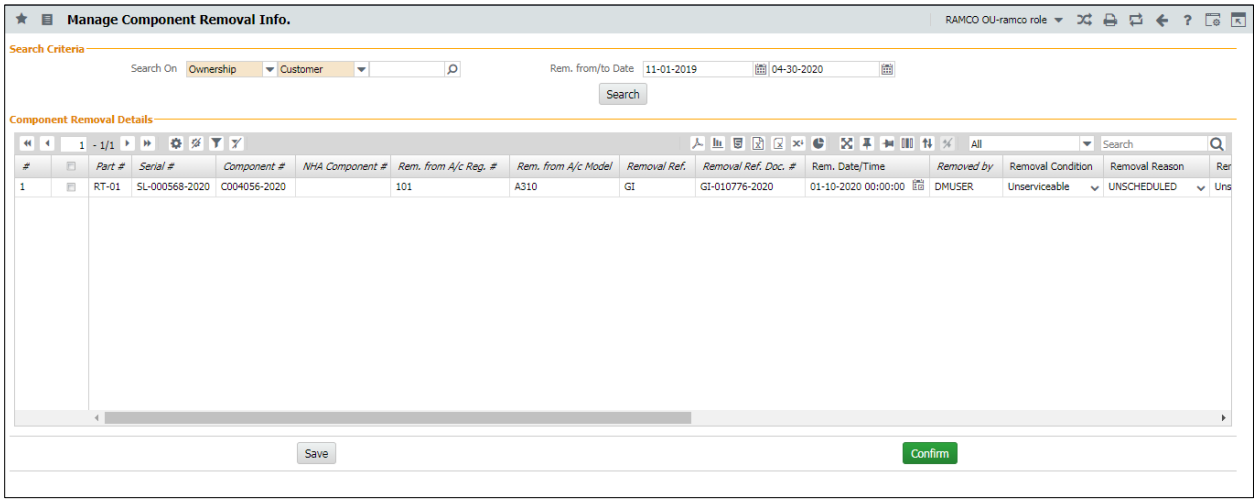
The above mentioned UI can be launched from **Reliability Management > Reliability Analysis > Manage Aircraft Utilization Info.**

Manage Component Removal Info.

The screen is intended to retrieve all Component Removals done, either through Component removals from an Aircraft or a Customer Goods Receipt, which is now also recognized as a removal, based on an option setting.

The removal information includes all typical details such as Removed from A/c Reg. #, Model #, Removal Station, Removal Reason, Removal Type, Removal Condition, etc. The information is posted directly upon GI completion and this screen enables user to review the information for any incorrect attribute selection. User is permitted to modify the Removal Condition, Removal Type and Removal date & time from this screen. Only on confirmation of the data, the revised information will be considered for the respective Component Reliability Assessments.

Exhibit 2: Identifies the **Manage Component Removal Info.** screen



The above mentioned UI can be launched from **Reliability Management** > **Reliability Analysis** > **Manage Component Removal Info.**

Auto Categorization of LTR and NFF

APRP-228, APRP-231

Background

Components can be frequently removed from Aircraft for repair and maintenance purposes. Frequent removals would mean the component is becoming more unreliable. In order to track the reliability of components attached to aircraft, organizations generally perform a reliability analysis on a periodic basis. The analysis involves checking if the component removal data satisfies certain conditions based on which the component might be marked and tracked into a watch list. While the system is capable of tracking the component removal information and its utilization over a period, it would be fair to expect it to compare the removal data with some standard conditions and flag them into a watch list automatically.

A few such analysis are Low Time Removals and No faults found. Thus, the need is to set some rules based on which components can be automatically tagged as LTR/NFF and automatically flag components as LTR or NFF based on the set criteria.

Change Details

Every Goods Receipt from a Customer will be considered as a removal based on a parameter. These removal information will be considered for the periodic reliability analysis along with all properties of removal. While the history of removals is captured and retained, on each removal (receipt), system will automatically check for the rules to flag a part as LTR/NFF and see if any incoming component satisfies the condition. A component which satisfies the condition for LTR will automatically be flagged as LTR and similarly NFF along with its severity level. This whole process is made to be an offline process which can process multiple component removals at a time.

Component Level LTR Tracking:

There will be an offline backend scheduler configured automatically which will evaluate the rules set and tag the component as LTR.
For example:

- Rule 1 is set as: **LUSR12M >= '3'**.

In the above rule, LUSR12M indicates, '***Last Unserviceable Removals in 12 Months***'. System will typically carry the removal information of the component for the last 12 months from current date. Including the current receipt/removal, system will look for the number of unserviceable removals in the last 12 months, and if this number is greater than or each to 3, the component will be flagged as LTR.

While the component is automatically flagged, the visibility of the identified watch list will be in the Component Removal Assessment Dashboard.

Component Level NFF Tracking:

Every part being received on unscheduled removal can be tagged as a **No Fault Found** in GI based on the Customer inputs. But, the component may still need to undergo certain checks internally or by a vendor before it is a confirmed NFF. This confirmation is automatically updated based on the repair shop confirmation currently from Repair Shop findings report against a Repair Order. This confirmed component NFF can be reviewed in the Component Removal Assessment Dashboard.

Part Level NFF Tracking:

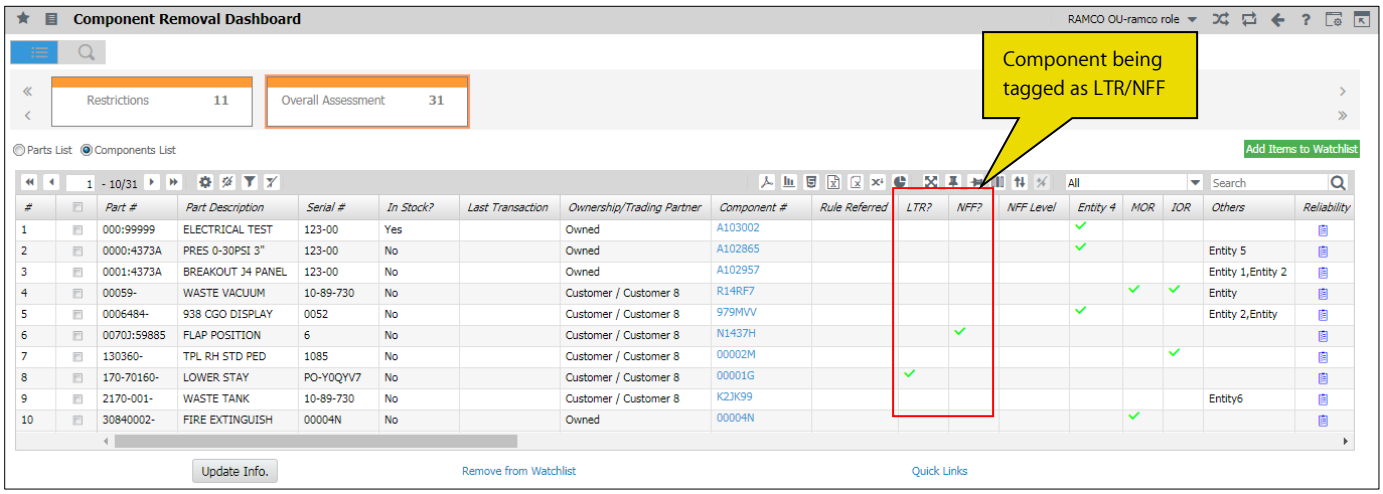
While a component can be tagged as a NFF for each instance of removal, based on an aggregate review over a period, a component which gets repeatedly removed on NFF basis may result in tagging the Part itself as a NFF part. This part level NFF tracking may also have a severity level associated to it. Similar to LTR evaluation, with the available removal details, system will automatically review all Component level NFF information of a part and accordingly tag the part as NFF with a severity level.

For example:

- Level 1 is set as: **NFF1M > '2' AND NFFRate1M > '50 URR (in %)'**
- Level 2 is set as: **NFF1M > '2' AND NFFRate1M > '50 URR (in %)' AND JRR1M > '30'**
- Level 3 is set as: **NFF6M >= 5 AND NFFRate12M > '30 URR (in %)'**

In the above rules, NFF1M/6M indicates the count of Confirmed NFF in last 1 or 6 months, NFF Rate indicates the confirmation rate of Component NFF flag, URR indicates the Unscheduled Removal rate and JRR indicated Justified Removal Rate.

Note: A single Part # can satisfy multiple NFF rules. But the latest highest rule will be considered in Component Removal Dashboard.



Run MTBUR Analysis for a Fleet based on Alert Definition Setup

APRP-247

Background

This enhancement brings improvements in MTBUR analysis of components that is periodically done for every month. The analysis outcome is to identify the list of parts that cross a certain threshold value of MTBUR (called the Alert value) and maintain a separate watchlist.

Currently, Ramco offers MTBUR analysis based on fixed Alert values and the Alert value in turn is computed periodically based on a standard formula. While the formula is standard, the multipliers involved could vary from one customer fleet to another, which requires to be configured.

Periodic MTBUR analysis is required to be performed and a watchlist is expected to be derived based on comparison with the computed Alert values at a fleet level.

Change Details

The existing user interface **Analyze MTBUR for Parts** under the component **Reliability Analysis** and the business process **Reliability Management** has been retained and enhanced to function with revised formulae. The improvements in this page are elaborated below:

- Reliability process parameters have already been identified with parameters to handle the variation in multipliers of the Alert level formula.
- Based on an option setting, the system will identify Alerts either based on existing threshold Alert MTBUR for parts or based on the computed Alert values.
- Alert Value for each Part is obtained using the following formula;

  Alert Value = Ẍ + (Multiplication factor) σ

  Where,

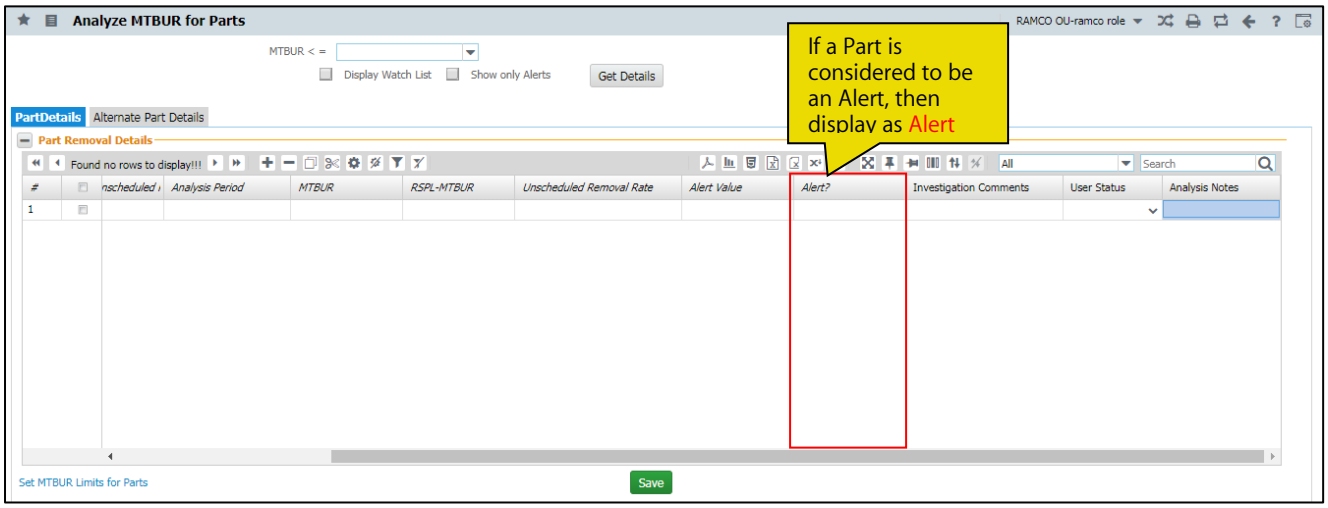
  Ẍ = ΣX/N i.e. Mean of quarterly unscheduled removal rate

  N = Count of quarters from the parameter 'Number of Quarters to be considered for URR based Alert Computation'

  Multiplication factor = Multiplication factor from the parameter 'Multiplication Factor for URR based Alert Computation'

  σ = standard deviation of quarterly unscheduled removal rate
- The existing screen of Analyze MTBUR for parts will be retained and enhanced to represent the watchlist based on the configured Alert values
- Similar to the offline processing of LTR/NFF analysis, MTBUR is also configured as an offline process which will be run periodically, once in a day / week / month based on a parameter.
- The outcome of the offline processor will be to identify the Parts which satisfy the MTBUR alert rule and be identified with Alert flag automatically.
- Analyze MTBUR for Parts interface will show the MTBUR values for the period against the satisfied rule. For parts that are not identified as Alert, the system by default will display the values based on the past three month data. This provides the information to the user to analyze and manually tag a part as Alert, if needed.

Exhibit 1: The **Analyze MTBUR for Parts** screen



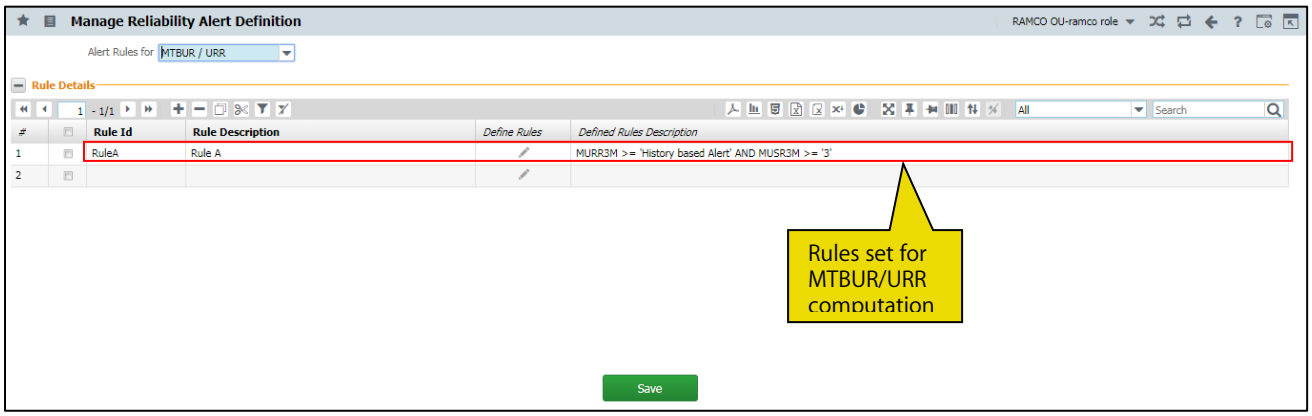
MTBUR Rule Definition:

The Rule definition for MTBUR Alerts is to be set in the **Manage Reliability Alert Definition** interface.

Let us consider **Rule1** set as,

MURR3M >= 'History based Alert' AND MUSR3M >= '3', which represents "URR for 3months greater than or equal to History based Alert" and "Unscheduled Removals for 3months greater than or equal to 3". For a given part to be Alert, the part must satisfy both the rules for it to be tagged as an Alert in the **Analyze MTBUR for Parts** page.

Exhibit 2: The **Manage Reliability Alert Definition** screen



Component Removal Assessment Dashboard

APRP-278

Background

For an organization performing periodic Component Reliability assessments, it is a much needed provision to be able to track and review various reliability watchlist in a single interface and act on them appropriately with adequate information. The user interface is expected to display parts and components identified into a watchlist with provision to disposition these parts by either moving them out of the watchlist or restricting their usage henceforth.

Change Details

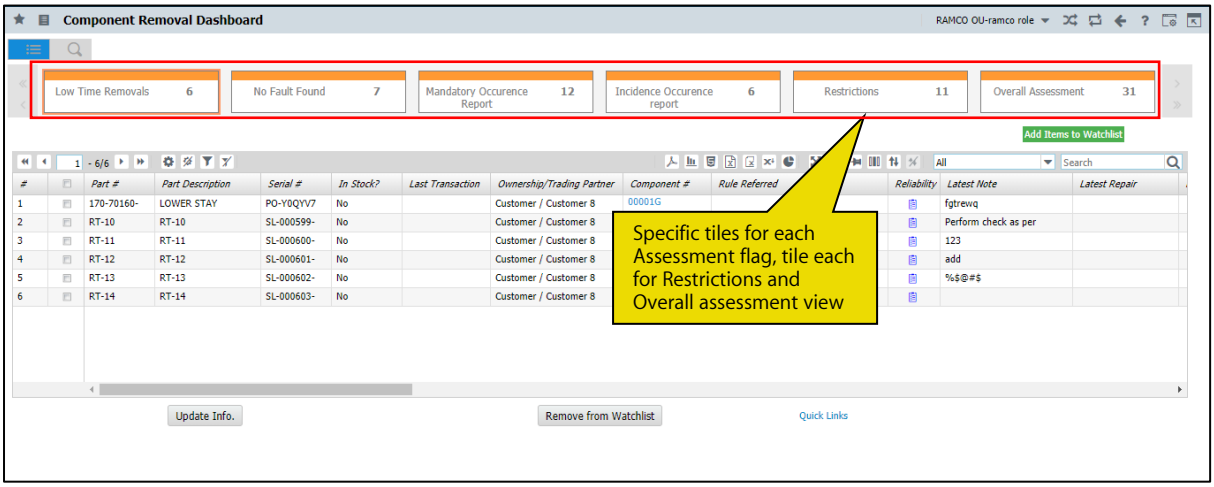
This enhancement provides the Tech Records team a wide look of different Component Reliability assessments on a single screen. A dashboard version of Component Removal assessments has been introduced to achieve this.

The new dashboard can be launched from Business process **Reliability Management >** Component **Reliability Analysis >** Activity **Component Removal Assessment Dashboard.**

A few highlights are:

1. **Watchlists:** Based on the removal data and auto evaluation with respect to the assessment rules, the components & parts identified as either LTR or NFF or any other user defined assessments by the system data, will be listed under individual tiles. While LTR and NFF are predefined tiles, 3 other user defined tiles can be chosen to be displayed in the dashboard. Additionally, Restrictions is yet another watchlist that will contain list of parts or components restricted based to reliability analysis.
   An **Overall Assessment** tile has also been positioned for complete visibility of all Reliability assessments applicable to a part/component.

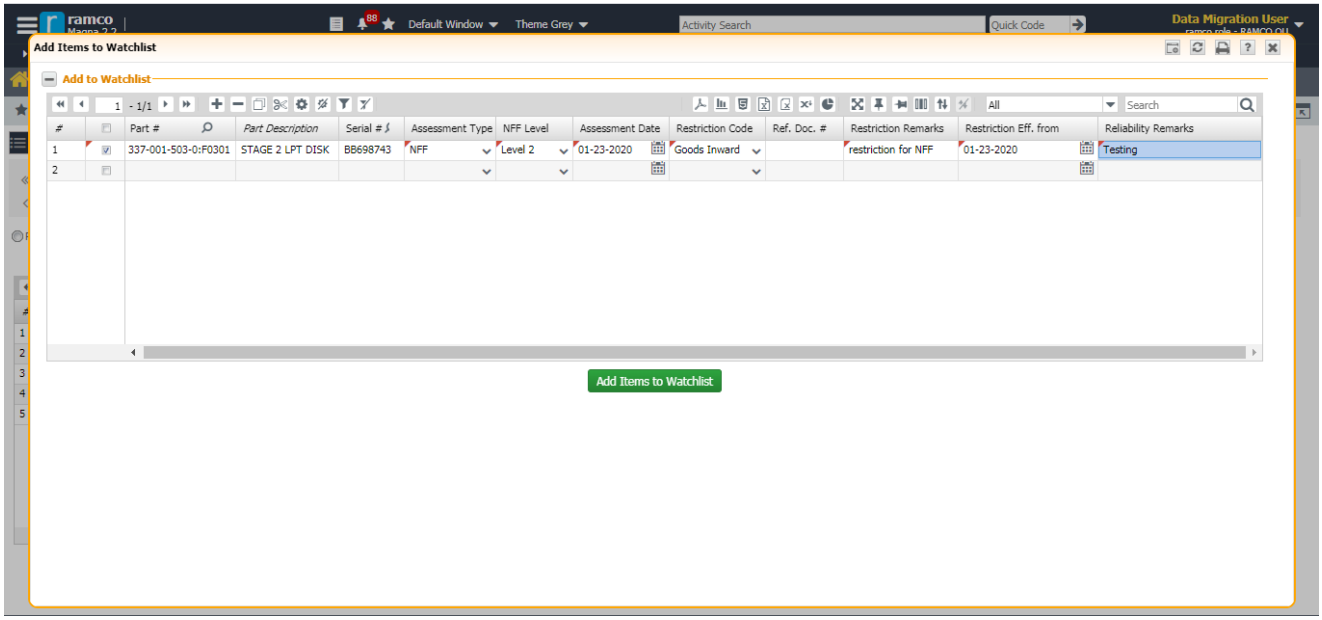
Exhibit 1: The **Component Removal Dashboard** page



2. **Add Items to watchlist:** This link facilitates the user to add records manually to the watchlist. In order to upload/access the existing records, this link for manually uploading is being added to the dashboard. In **Add Items to Watchlist** screen, the user can add a single record or even bulk upload. The records can be added by default with assessment information. A provision to upload record along with the Restriction information is also provided here. On click of **Add Items to Watchlist** button, the record gets added to the

watchlist and to the relevant tiles.

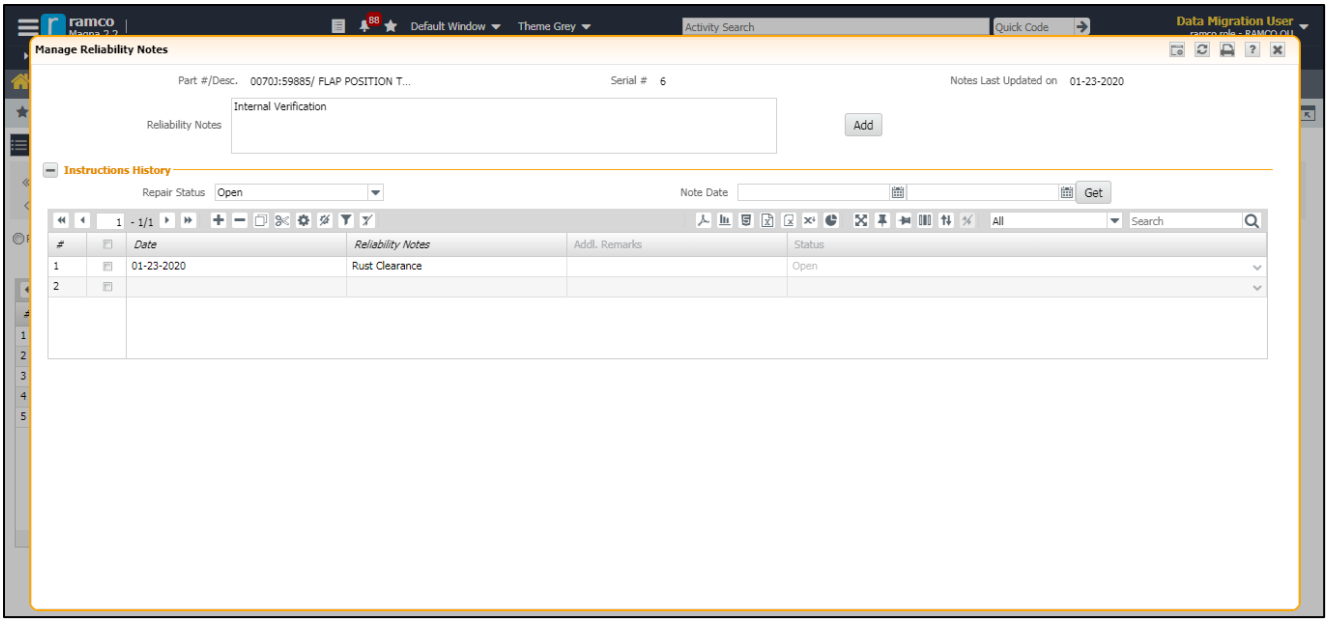
Exhibit 2: The **Add Items to Watchlist** screen



3. **Reliability Notes:** Reliability Notes has been provided for each assessment to be able to record / update certain repair or any other reliability-related instructions or notes for future reference. On click of the icon, the **Manage Reliability Notes** popup appears wherein the user can add comments. This can also be accessed by the users in the subsequent Repair Execution document for the component. Since, this is related to repair execution; each part/component might carry multiple comments tracked as history.

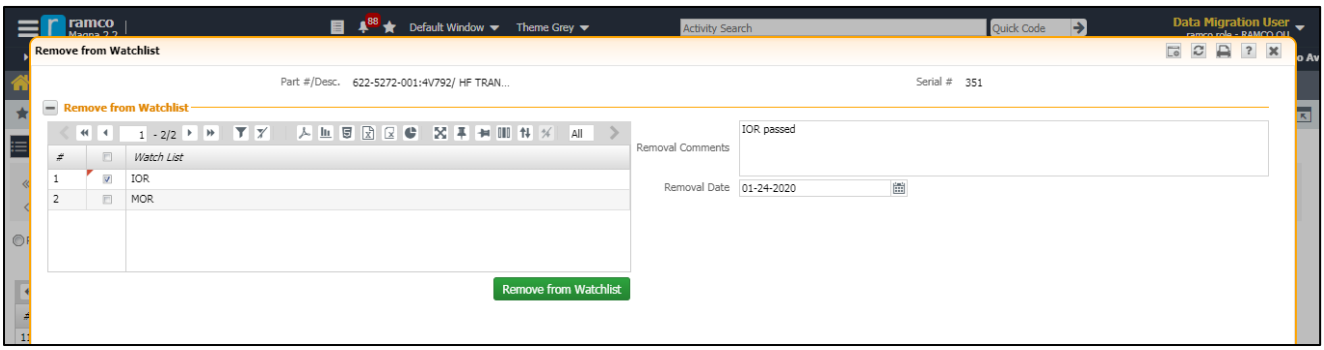
Note: This visibility of Reliability notes in respective execution documents will be done in subsequent releases.

Exhibit 3: The **Manage Reliability Notes** page



4. **Remove from Watchlist: Remove from Watchlist** is one way of dispositioning a part/component from the watchlist, if it is found to be performing well. The intention is to reset the reliability attributes of part/component or in other words indicate that the part/component is no more LTR or NFF. In case of the **Overall Assessment** tile, a single record can be tagged to multiple assessments and there might be a chance that only few of the assessments need to be removed. In such conditions, the user will have an option to choose the assessment flags to be removed in a pop-up.

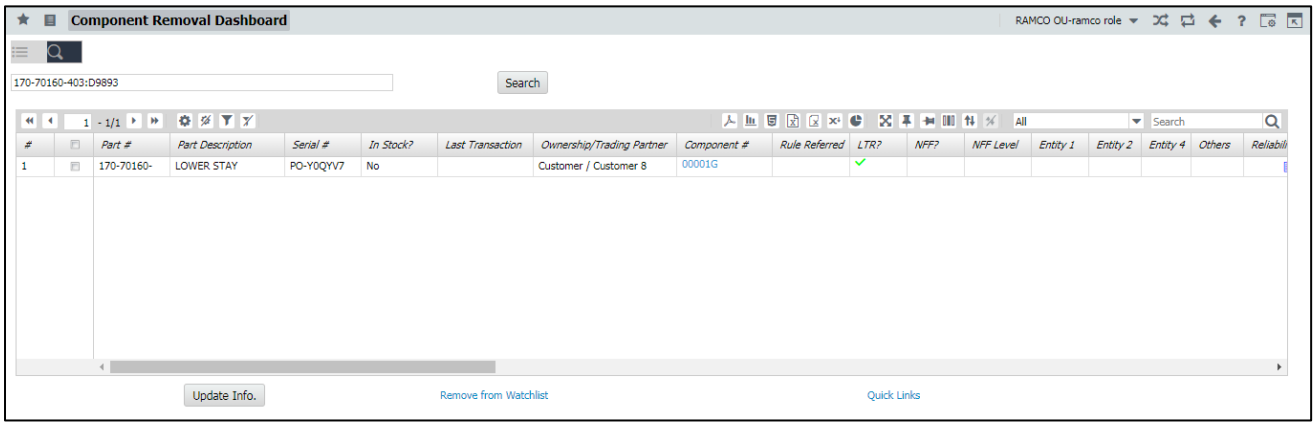
Exhibit 4: The **Remove from Watchlist** page



5. **Restrictions:** Yet another way to disposition parts/components from watch list is to map them with a Restriction code and restrict the usage of part for further transactions. A part/component mapped with a restriction code will be updated to the **Manage Part Restrictions** framework, which currently validates the usage of part/component across transactions. For restrictions initiated from Reliability, the reference is taken as the removal instance i.e., Component Removal or Goods Inward on which the part/component was added to the watchlist.

6. **Search Tab:** The **Search** tab is similar to the **Overall Assessment** tile. The user can key in Part #, Part Description, Serial #, Ownership/Trading Partner in the **Global Search** field to view/modify records in the Watchlist previously tagged to an assessment.

Exhibit 5: The **Search tab**



Ability to generate PDF Reliability Reports in Excel using DW Framework- UI changes to select PDF or XL format on generation & tool changes

Reference: APRP-752

Background

Currently, the users can generate the Reliability reports in the PDF format only. However, some of these reports may be required to be generated in the Excel format. Hence, a provision is required that allows the users to select the report format in which they want to generate each of the reports.

Change Details

The users can now choose to generate reliability reports in the format that they prefer either Excel or PDF. The reports that were already published in PDF can be now be modified and then be regenerated in the Excel format. In cases of the reports in the PDF format being regenerated in the Excel format, the graphs in PDF format are shown as images in the Excel format. They can also set the format that appears by default in the **Report Format** drop-down of the Generate Reliability Report screen of the **Reliability Analysis** business component.

To facilitate the above features, the following developments have been incorporated in the **Reliability Analysis** business component.

- New Option **Report Generation Options** has been added in the **Category** drop-down list box in the **Set Options** screen to enable the users to define / default the report format in the **Generate Reliability Reports** screen.
- New field **Report Format,** a drop-down list box has been added in the **Generate Reliability Reports** screen to enables the users to choose the format for the reliability report. The drop-down list box displays the format options available for the generating reliability reports.
- New parameter **Reliability report generation option** has been added under the category **Report Generation Options** to define a report format at the organization level. This parameter decides which of the format options will be listed in the **Report Format** field in the **Generate Reliability Reports** screen.

Parameter: Reliability report generation option	
Parameter Value	Report Format drop-down list box options available
1	PDF
2	EXCEL
3	PDF& EXCEL

Another new parameter **Default report generation option** has been added under the category **Report Generation Options** to choose the option that must appear by default in the **Report Format** drop-down list.

Parameter: Default report generation option	
Parameter Value	Report Format drop-down list box options available
1	PDF
2	EXCEL

Exhibit 1: The **Set Options** screen in **Reliability Analysis**

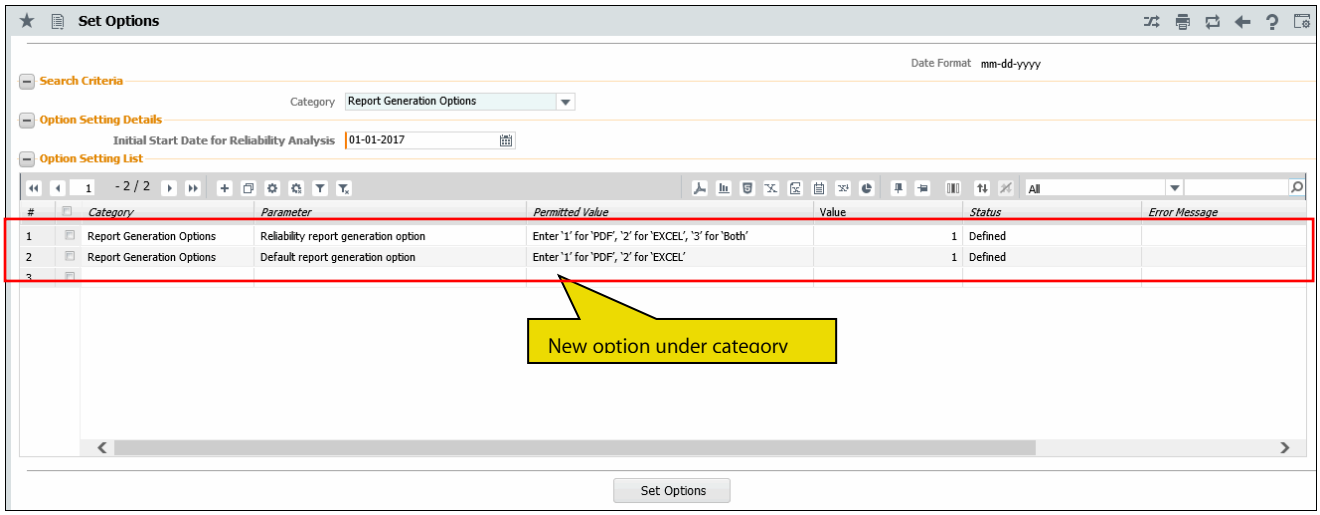
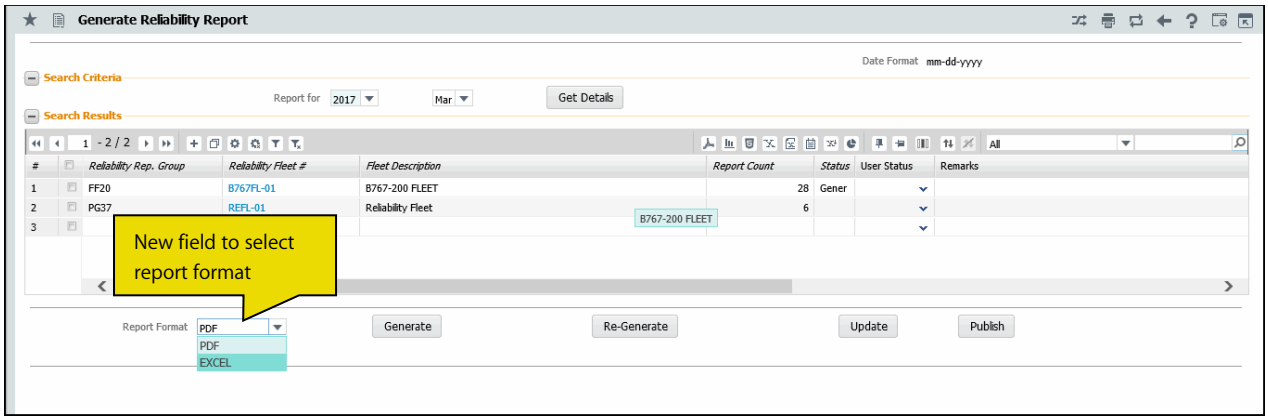


Exhibit 2: The **Generate Reliability Report** screen in **Reliability Analysis**



WHAT'S NEW IN FLIGHT OPERATIONS?

Ability to upload documents against a Journey Log

Reference: AHBG-31166

Background

Currently, the users can load documents associated with flight / journey under **Business Component Name** - **Aircraft Maintenance Exe. Ref.** and **Ref. Doc. Type** - **Aircraft Maintenance Exe. Ref. #**. However, an identifiable **Component Name** and **Ref. Doc. Type** combination is required to upload scanned journey log documents to the central repository of Ramco Aviation. However to feed this requirement, links to upload documents and view those attached documents are added in Create/Edit/Amend and View JL screens.

Change Details

In the **Flight Log** business component, the following changes have been incorporated in order to enable the users to upload scanned copies of journey log documents:

- **Upload Documents** link and **View Associated Doc. Attachments** link are added in **Create/Edit/Amend and View Journey Log** screens.
- Similarly, the **Select** screen of **Edit and View Journey Log** also have the above two links added to them.
- If user launches any of the above links from the respective screen after selecting a record it will default the Business Component Name as 'Flight Log' and the Ref. Doc. # as 'Journey Log' and the selected JL # will be displayed.
- User can upload and view the documents against the JL# in **Upload Documents** and **View Associated Doc. Attachments** screen respectively.

Exhibit 1: Identifies the **Create Journey Log** screen

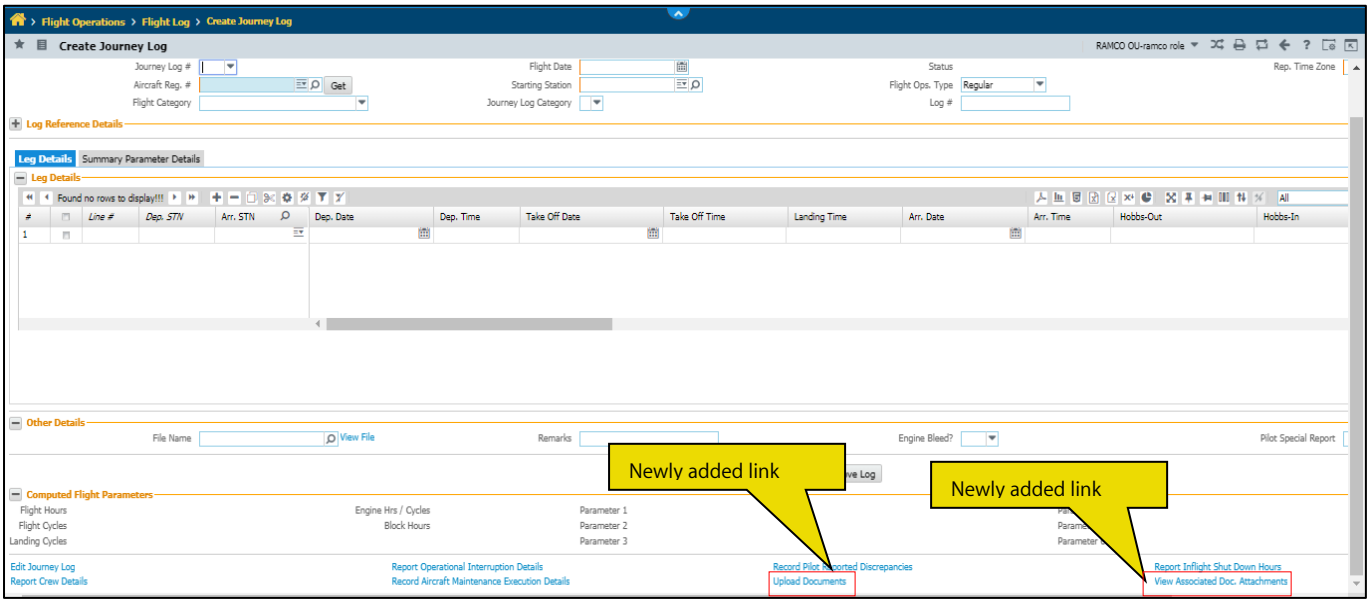


Exhibit 2: Identifies the **Edit Journey Log** screen

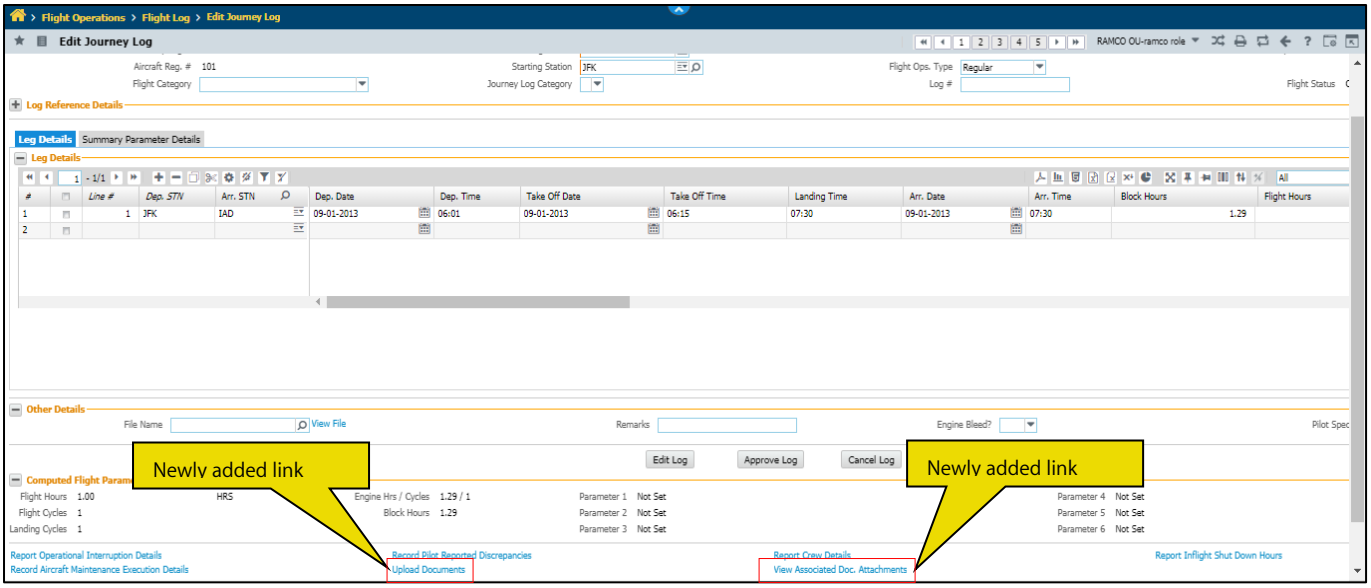


Exhibit 3: Identifies the **Amend Journey Log** screen

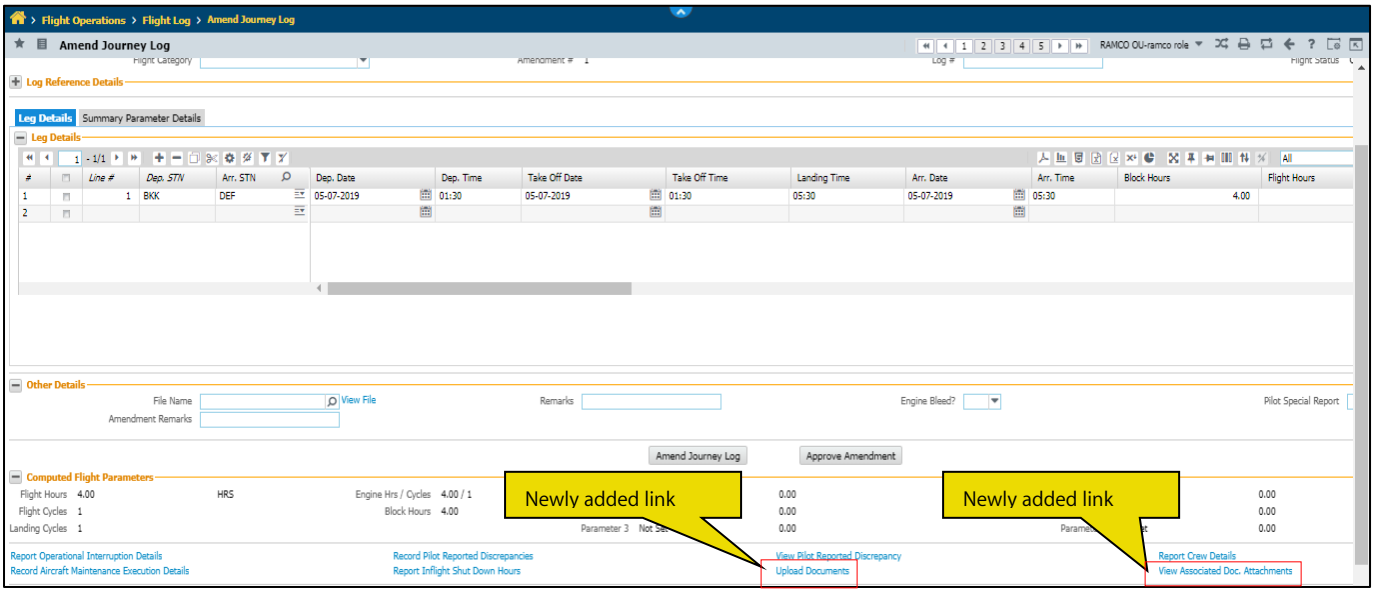
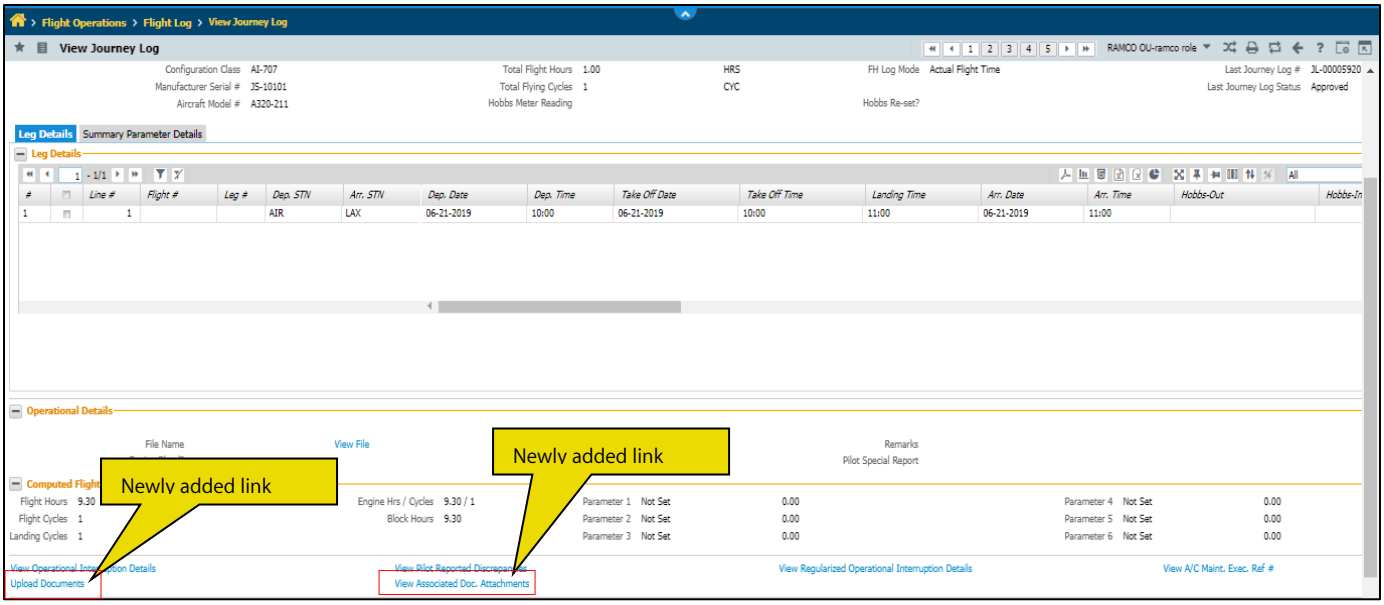


Exhibit 4: Identifies the **View Journey Log** screen



Configure and Validate Duty Limitations

Reference: APRP-162

Background

In order to prevent the daily and cumulative effects of flight fatigue, duty limitations have been developed by regulatory authorities around the world. Flight and duty limitations are established to limit the number of hours that the flight and cabin crew can work in a particular period before which rest must be taken. Apart from duty limitations, the regulatory authorities also release some currency requirements that pilots must meet in order to be eligible to fly. This requires that the certificate and experience details of the pilots are up to date to take up flying.

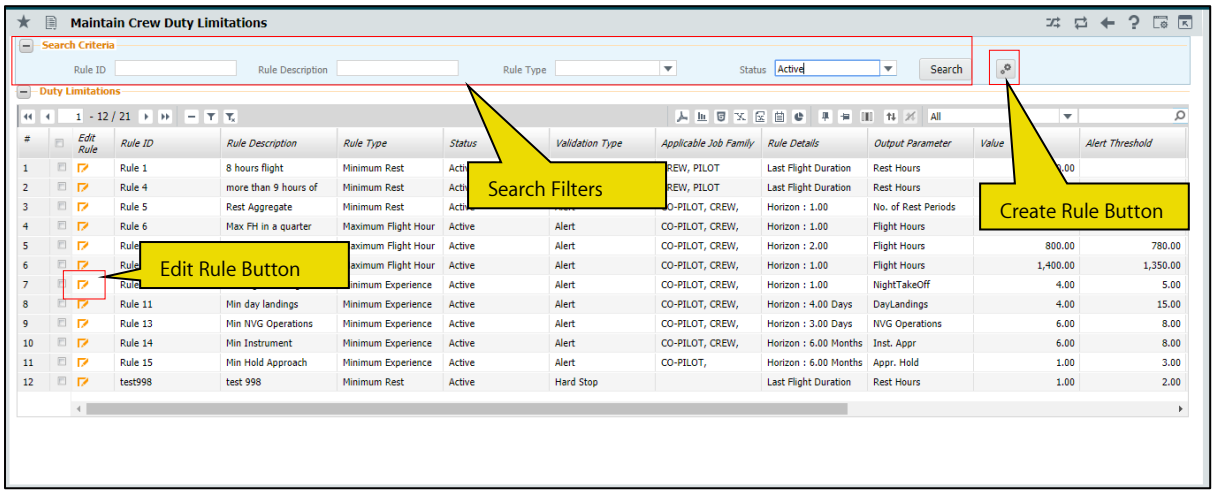
Change Details

Maintain Crew Duty Limitations

A new screen has been developed to configure the various duty limitations and experience-based currency requirements in one place. Rest-related rules, rest aggregate-related rules, flight hour based rules and experience based rules can be configured in the system. These rules will be validated at the time of clocking into **CrewAnywhere.**

Rest-related rules deal with the amount of rest a crew member is mandated between duties on a regular basis. Rest aggregate-related rules govern the overall rest periods that a crew member can avail in a specified period. The Flight hour based rules restrict the total flying hours that a crew member is allowed to clock in a given period. Finally, experience based rules relate to the duties and activities that a crew member must perform in a specific period to be eligible to fly.

Exhibit 1: Entry point screen to create duty limitations in the system

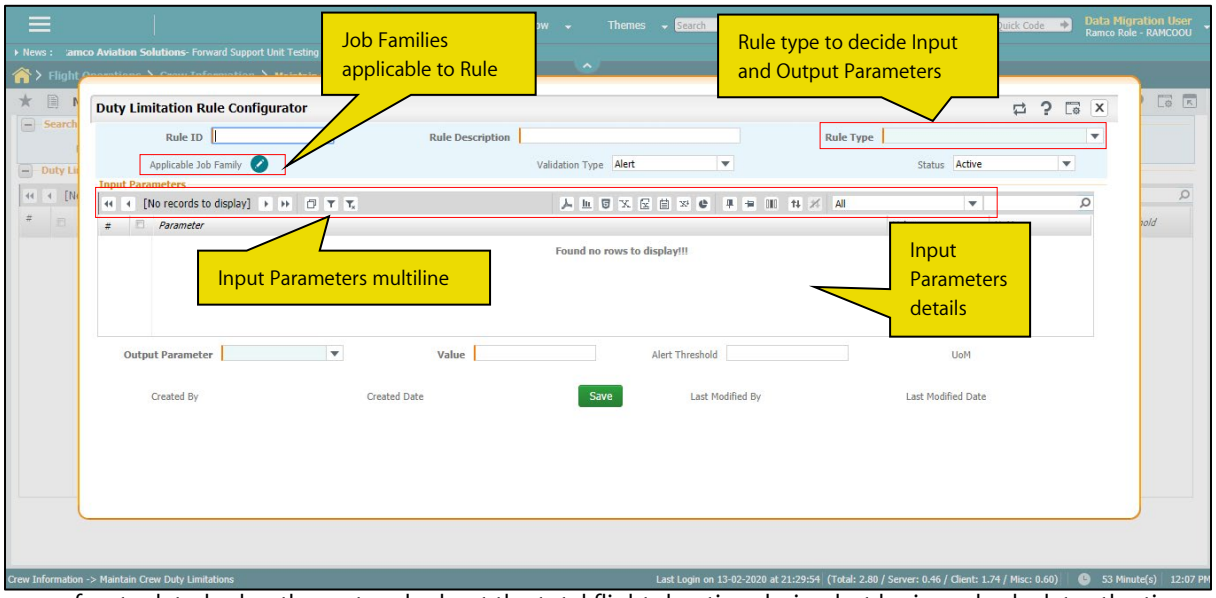


Rule Configurator

Rules under the above described Rule Type can be configured in this screen. Rules can also be flagged against a specific job family which gives the ability to setup rules for pilots which are different from rules for co-pilot or other crew members. Rules can also be configured to either stop an employee from clocking into the system or provide an alert at the time of clock in, if any of the active rules are violated.

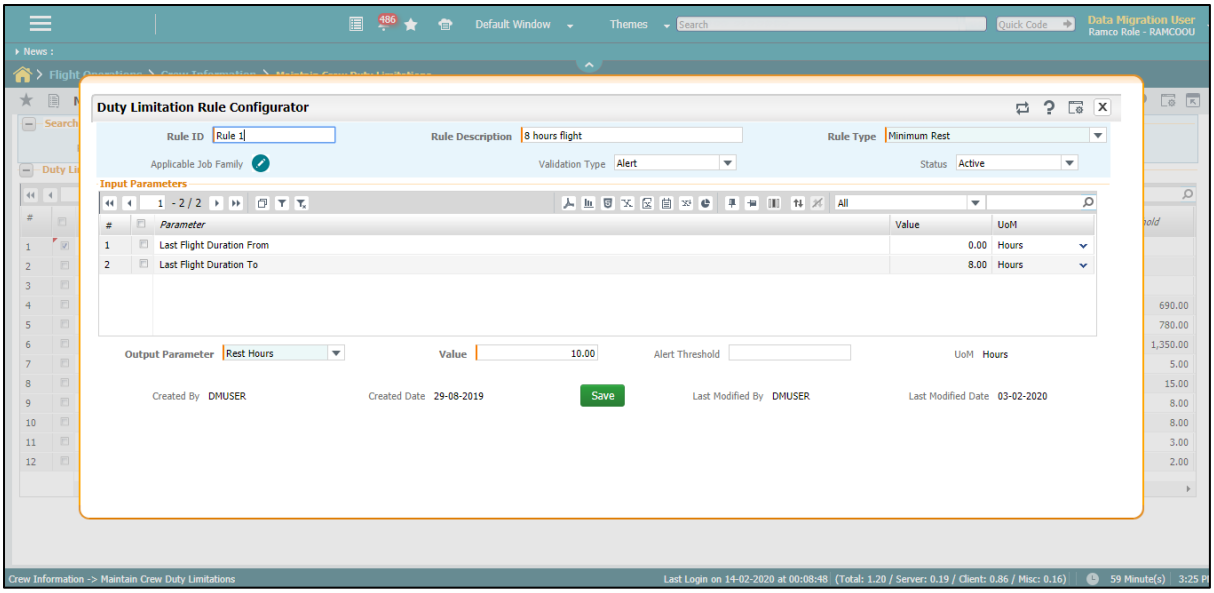
Each rule type has a set of input parameters and an output parameter. Input parameters are conditions under which the rule is evaluated and the output parameter is the final value computed under the given conditions. As a part of the rule definition a value is set for each output parameter. In the rule evaluation process, the system compares the computed output value with the output value mentioned in the rule. For minimum Rule Types, the system alerts or stops the user if the calculated output parameter value is below the set output parameter value. For maximum Rule Types, the system alerts or stops the user, if the calculated output parameter value is above the pre-set output parameter.

Exhibit 2: Duty Limitations rule configurator



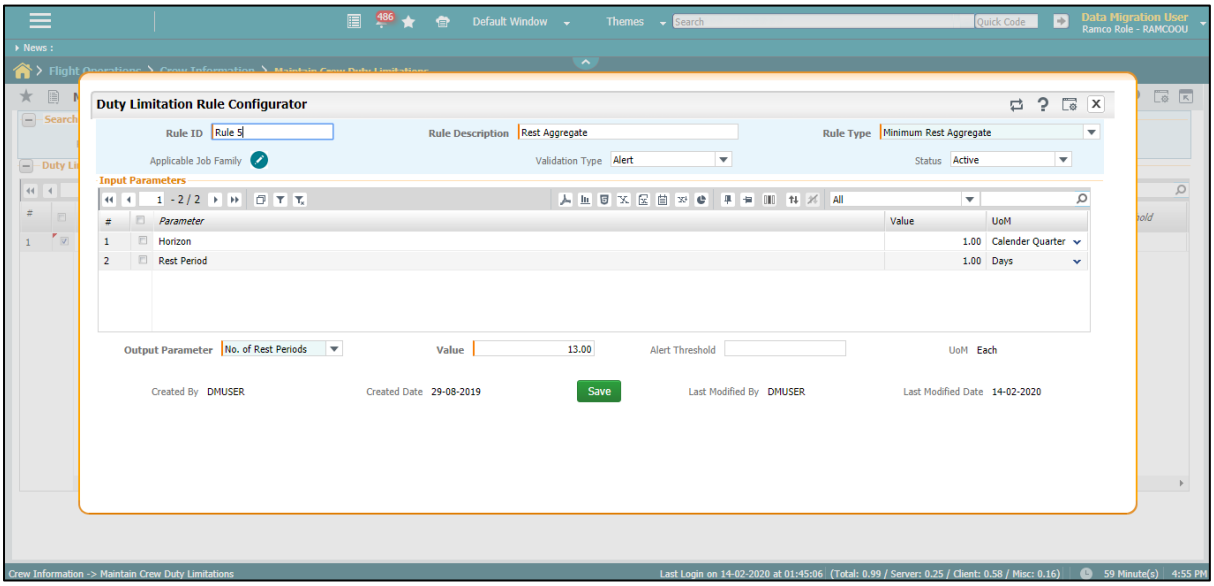
In case of rest related rules, the system looks at the total flight duration during last login and calculates the time between previous clock out and current clock in as rest hours. A range for total flight duration can be entered as input parameters in this case and the output parameter is the rest hours. In this rule evaluation system will calculate the total rest when the total flight hours falls between the given flight hour range.

Exhibit 3: Input and Output Parameters for Rule Type: Minimum Rest



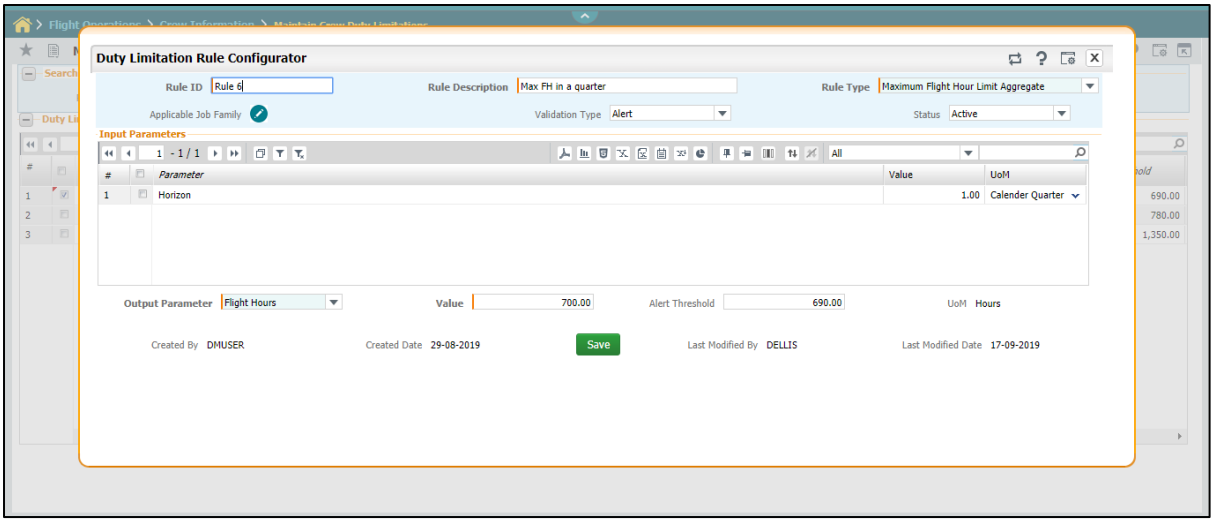
For rest aggregate related rules one input parameter is a time horizon in which the rest periods need to be evaluated and the other parameter is the definition of the rest period. The output parameter for this rule is the number of such rest periods that exist in the given horizon. The horizon and definition of the rest period can be in days or months or calendar quarter or years. In this rule evaluation system will aggregate the number of rest periods in the rule horizon.

Exhibit 4: Input and Output Parameters for Rule Type: Minimum Rest Aggregate



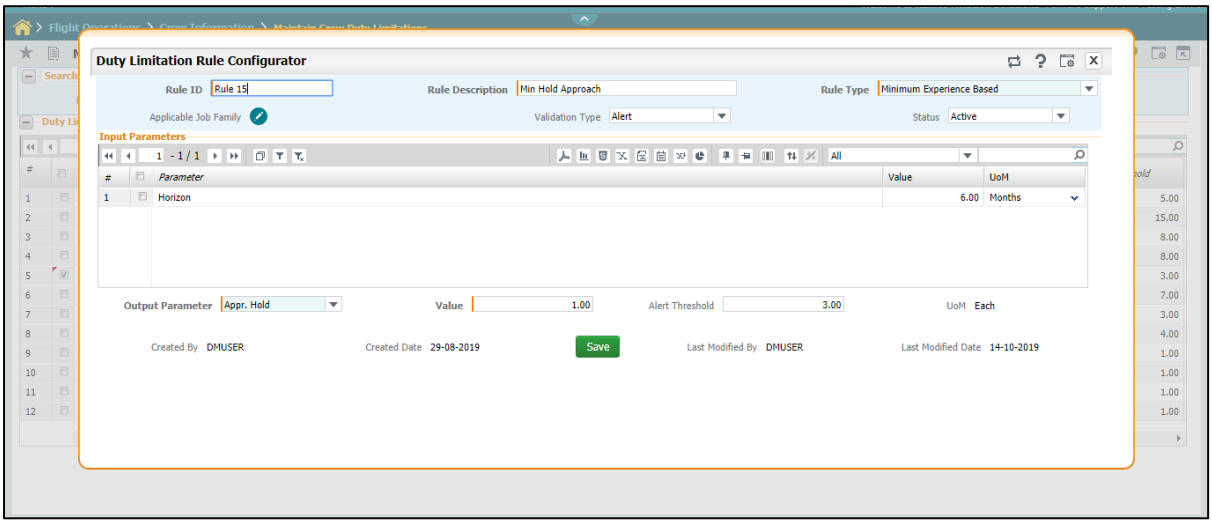
In case of flight hour related rules the input parameter is the horizon in which flight hours need to be aggregated. The output parameter is the total flight hours. Horizon for this rule can be defined in days or months or calendar quarter or years. In this rule evaluation system will aggregate the total flight hours in the rule horizon.

Exhibit 5: Input and Output Parameters for Rule Type: Maximum Flight Hour Limit Aggregate



Finally for experience based rules the input parameter is the horizon in which the rule needs to be evaluated. The Output parameter can be any duty or activity defined in the system. Horizon for this rule can be defined in days or months or calendar quarter or years. In this rule evaluation system will aggregate the specified duty or activity in the rule horizon.

Exhibit 6: Input and Output Parameters for Rule Type: Minimum Rest Aggregate



All rules have an alert threshold that controls when these limitations are alerted to the user in "Review Pilot Crew Log" screen. All rules are evaluated at the time of clock in to Crew Anywhere.

Process Parameters

A new process parameter "Status of attendance records to be considered for Duty Limitation computation" has been added under the Entity Type 'Crew Information' and Entity 'Duty Limitations' in the **Set Process Parameters** screen of the **Define Process Entities** activity of the **Common Master** business component.

- If the set option is set as '1' (Fresh), then only records in the Fresh status will be considered for minimum rest and minimum rest aggregate related rules.

- If the set option is set as '2' (Authorized), then only records in the Authorized status will be considered for minimum rest and minimum rest aggregate related rules.

A new process parameter "Choose the day rest periods must be associated to" has been added under the Entity Type 'Crew Information' and Entity 'Duty Limitations' in the **Set Process Parameters** screen of the **Define Process Entities** activity of the **Common Master** business component.

- If the set option is set as '1' (First Day), when rest period spans across two horizons during Rest Aggregate related rule evaluation then the rest hours will be considered against the starting day of the rest period.
- If the set option is set as '2' (Last Day), when rest period spans across two horizons during Rest Aggregate related rule evaluation then the rest hours will be considered against the ending day of the rest period.

A new process parameter "Should discrete rest periods or continuous rest periods be considered for rules of rule type "minimum rest aggregate" ?" is added under the Entity Type 'Crew Information' and Entity 'Duty Limitations' in the **Set Process Parameters** screen of the **Define Process Entities** activity of the **Common Master** business component.

- If the set option is set as '1' (Discrete), then during rest aggregate rule evaluation system will consider any rest period that is a multiple of rest period defined in the rule as multiple rest periods
- If the set option is set as '2' (Continuous), then during rest aggregate rule evaluation system will consider any rest period that is a multiple of rest period defined in the rule as one rest period.

WHAT'S NEW IN ROSTER MANAGEMENT?

Ability to view qualification details of employees at any particular work center

Reference: AHBG-30933

Background

In the Aviation industry, the Crew Scheduler / Shift planners prepare rosters for a period of a month that contain the flight schedules and duty details of pilots / mechanics. Rostering enables key information including employees' assignment to shifts / re-assignment of employees' to shifts based on employee availability /leave etc. This information is recorded and disseminated across the board to aid in the assignment / re-assignment of employees to aircraft. However, additional criteria to be considered during rostering are the qualifications of employee. Certain jobs require an employee with specific qualification and hence a report to display all employee qualifications is required. The Qualification report of employees at any particular work center can be launched from the Generate Qualification Report screen.

Change Details

Generate Qualification Report

The **Generate Qualification Report** screen under the **Manage Employee Roster** business component facilitates Qualification Report generation for employees at any particular work center.

Further the report can be generated for,

- All employees / a particular employee
- All Qualification codes / a particular qualification code
- Multiple days/ a particular date

The Search Criteria section helps to generate report in two categories, i.e., Flight Operations and Maintenance. If Flight Operations is selected as report generation option then all employees with job family that is mapped to the role "Pilot", "Co-Pilot", "Instructor", "Crew" defined in the Set Sales Process Parameters activity will be considered. If Maintenance is selected as report generation option, then all employees not under Flight Operations will be considered.

A new process parameter, "Qualification Type to be considered for Qualification Report" with permitted values will be added inside Entity type: 'Roster Management' and Entity- 'Roster Reports' under the Common Master business component in the **Define Process Entities** activity to feed the Qualification Type. The system will only consider qualification under the mentioned qualification type for the report. If no qualification type is mentioned then the system considers all qualification types for the report.

Exhibit 1: Identifies the **Generate Qualification Report** screen

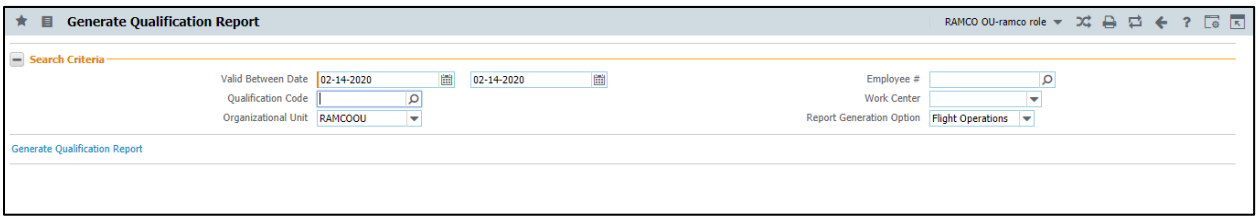
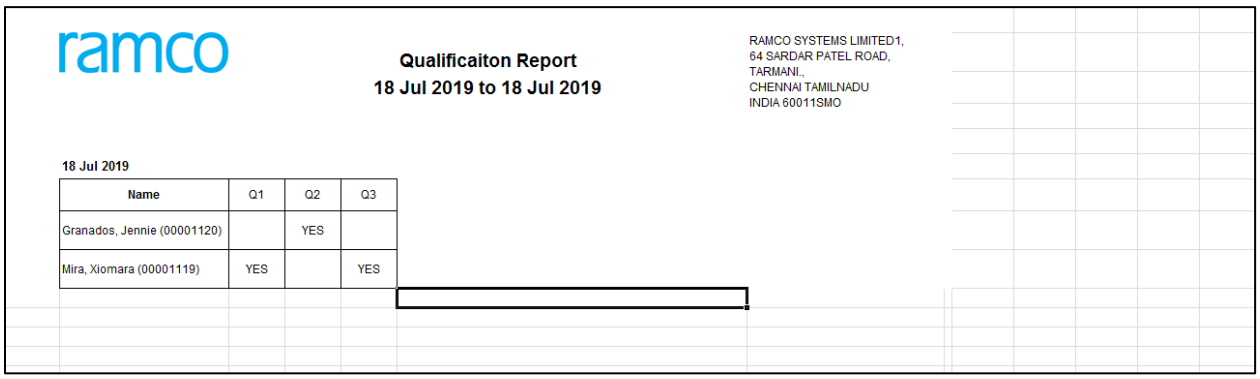


Exhibit 2: Identifies the **Sample Qualification Report**



ramco

Qualificaiton Report
18 Jul 2019 to 18 Jul 2019

RAMCO SYSTEMS LIMITED1,
64 SARDAR PATEL ROAD,
TARMANI.,
CHENNAI TAMILNADU
INDIA 60011SMO

18 Jul 2019

Name	Q1	Q2	Q3
Granados, Jennie (00001120)		YES	
Mira, Xiomara (00001119)	YES		YES

Ability to view certificate details of employees based on report filters

Reference: AHBG-30934

Background

In the Aviation industry, the Crew Scheduler / Shift Planners prepare rosters for a period of a month that contain the flight schedules and duty details of pilots / mechanics. Certificates are key criteria considered before a mechanic is assigned any maintenance task. Certificates like medical certificates are also mandatory for pilots and flight crew to be eligible to fly. This report will provide the expiry date of all certificates of employees for a specific period. The Certificate Expiry report of employees can be launched from the Generate Qualification Report screen.

Change Details

Generate Certificate Expiry Report

The **Generate Certificate Expiry Report** screen under the **Manage Employee Roster** business component facilitates the Certificate Report generation of employees.
Further the report can be generated for:

- All employees / a particular employee
- All certificates under a certification category
- Multiple days / a particular date

The Search Criteria section helps to generate the report in two categories, i.e., Flight Operations and Maintenance. If Flight Operations is selected as report generation option then all employees with job family that is mapped to the role "Pilot", "Co-Pilot", "Instructor", "Crew" defined in the **Set Sales Process Parameters** activity will be considered. If Maintenance is selected as report generation option, then all employees not under Flight Operations will be considered. On click of the **Generate Certificate Expiry Report** link, the report is launched with the below color coding logic.

- Green - If the report is being generated before "Currency Date"
- Amber- If the report is being generated between the “Currency Date” and “Valid Till Date”.
- Red- If the report is being generated after “Valid Till Date”.

Note:

a) If early grace period is not mentioned against a certificate, the currency period is the same as validity period

b) If late grace period is not mentioned against a certificate, the re-certification period is the same as validity period

Exhibit 1: Identifies the **Generate Certificate Expiry Report** screen

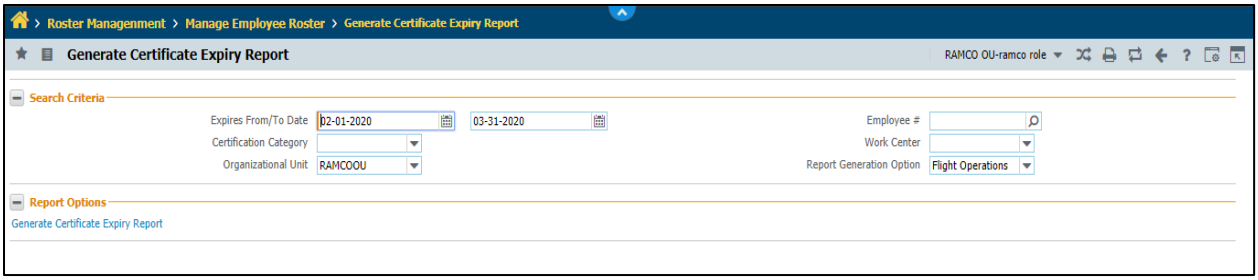


Exhibit 2: Identifies the **Sample Certificate Expiry Report**

ramco

Certificate Expiry Report

RAMCO SYSTEMS LIMITED,
64 SARDAR PATEL ROAD,
TARMANI.,
CHENNAI TAMILNADU
India 60011SMO

Jun 1 2019 to Mar 31 2020

Employee	Certificate #	Certificate Description	Certificate Category	Expiry Date
AARON KUMAR (00047711)	AIRFRAME-ENGINE	OS ACFT AND PPLANT WORK	OCCUPATIONAL STANDARD	2020-03-10
ABDELHAKIM HAOUZANE (00039664)	EMC-BASIC-SCA	RELEASE PARTS AND MODULES	SHOP CERTIFY AUTHORITY	2019-09-24
ABDELHAKIM HAOUZANE (00039664)	EMC-PART-INSP	ENGINE_APU INSP OF PARTS	WORK	2019-12-08
ABDELHAKIM HAOUZANE (00039664)	INSP-AUTH-PP	INSP AUTHORITY_EMC	INSPECTION	2019-09-02
ABDELMOUTTALIB LACHEHAB EL IDRISSI (00030817)	MPM-AVEOS	POLICY MANUAL AIRFRAME	REGULATORY PRE-REQ	2019-11-07
ABDERRAHIM ELBERHOUMI (00027016)	MPM-AVEOS	POLICY MANUAL AIRFRAME	REGULATORY PRE-REQ	2020-03-25
ABDERRAHMAN MAAZOUZ (00019129)	M-777-2XX-GE90	B777_200_300 GE90_100 ENG	AIRCRAFT CERTIFY AUTH.	2019-10-09
ABDESSAMAD ENNAJI (00037428)	INSP-AUTH	INSP AUTHORITY_GENERAL	INSPECTION	2019-10-30

Ability to view Roster details of employees at any particular Roster Level

Reference: AHBG-32249

Background

In the Aviation industry, the Crew Scheduler / shift Planners prepare rosters for a period of a month that contain the flight schedules and duty details of pilots / mechanics. Rostering enables key information including employees' assignment to shifts / re-assignment of employees' to shifts based on employee availability /leave etc. to be recorded and disseminated across the board. It also aids in the assignment / re-assignment of employees to aircraft. However, the planners require a provision to view the roster schedule of employees in a report format.

Change Details

Generate Roster Report

A new component **Manage Employee Roster** has been introduced under **Roster Management** business process. The **Generate Roster Report** screen under the **Manage Employee Roster** business component facilitates **Roster Report** generation for different levels.

Now, the Roster report for any Roster Level in an organisation can be launched from **Generate Roster Report** screen or from **Review/Publish Roster** screen. Further, the report can be generated for different Roster Level, Roster Group or Work Center or Span of Control.

The Search Criteria section helps to search for roster number at different roster levels. Roster level i.e., Roster Group, Work Center and Span of Control. Based on the filter criteria provided in Roster #, Roster Level, Description, Effective From, Effective To and Status, the system retrieves information. By selecting Roster # and clicking of **Generate Roster Report**, the report with employee and their shift/duty details appears.

Exhibit 1: Identifies the **Generate Roster Report** screen

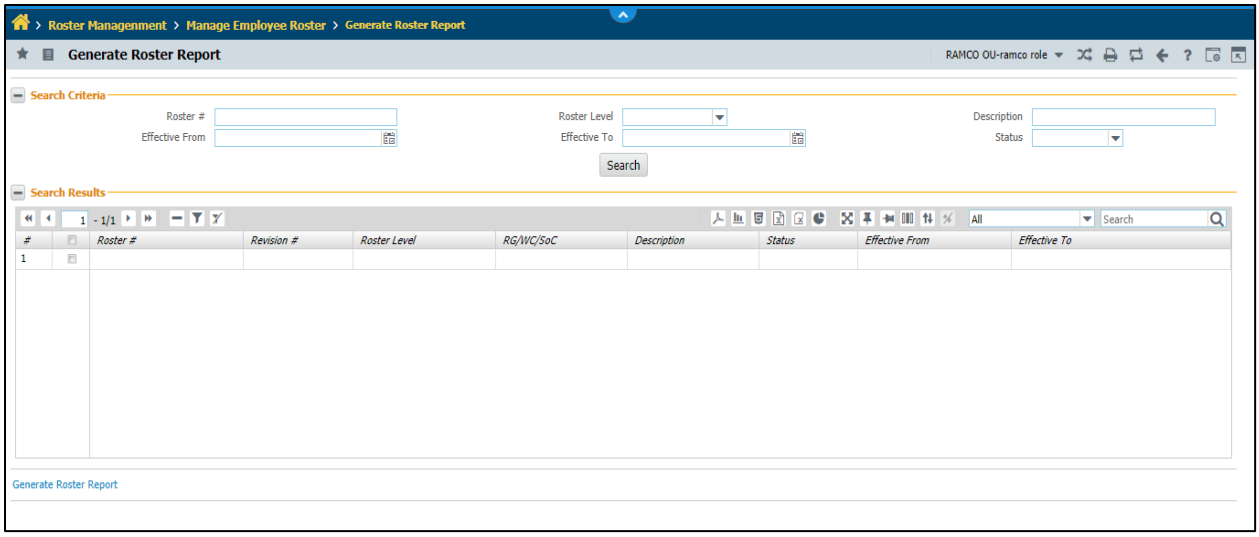
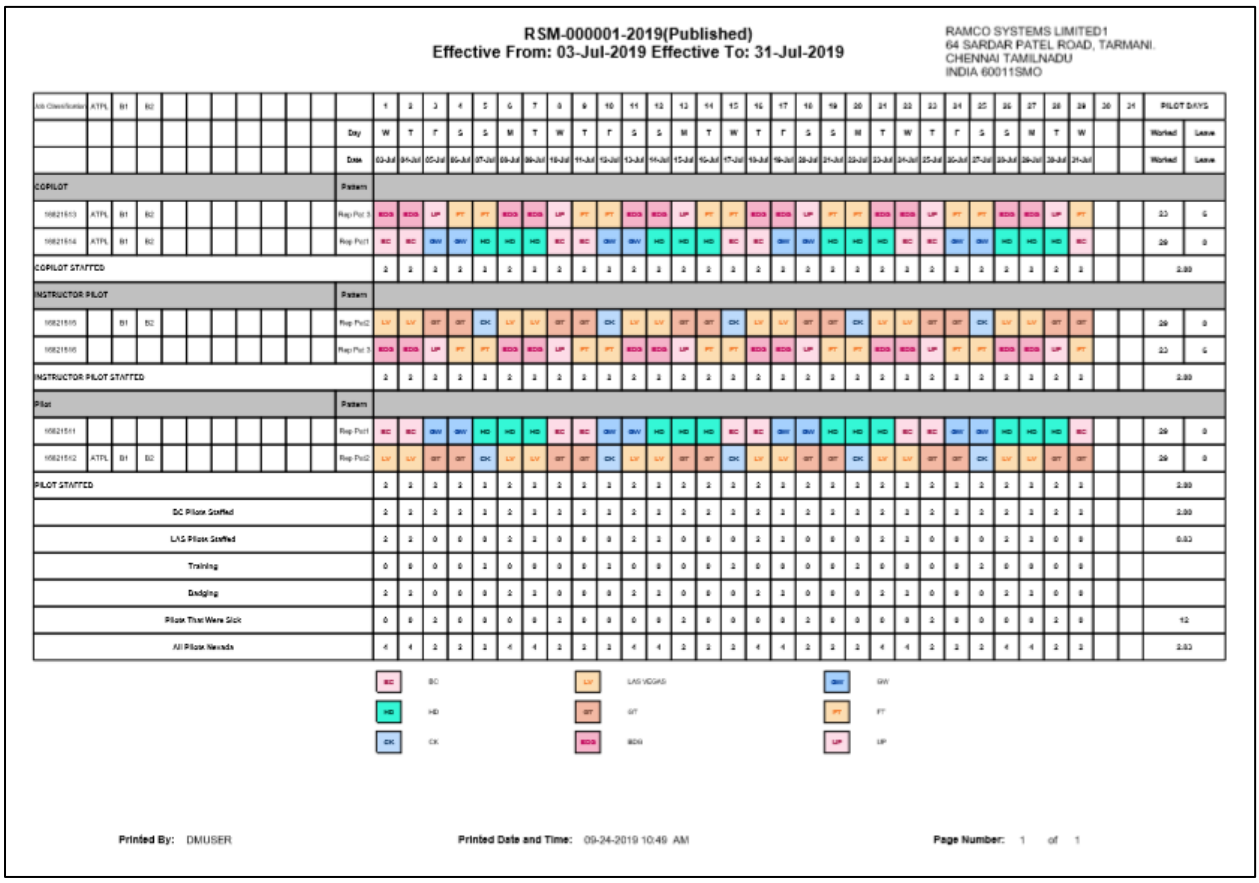


Exhibit 2: Identifies the **Sample Roster Report**



WHAT'S NEW IN AIRCRAFT MAINTENANCE EXECUTION AND SHOP WORK ORDER?

Ability to capture and view Sign Off Date & Time for AME and SWO

Reference: APRP-205

Background

This enhancement provides the ability to capture the Sign Off time along with Sign Off date and the user can see the Sign Off date and time in both AME and SWO.

Change Details

- Whenever the mechanic or inspector has signed off a task, the system will capture the current date and time in the time zone of the station of the work center for sign off.
- For displaying the Sign Off date and time, new display-only column **Sign Off Date & Time** has been added in the **View Work & Sign Off Information** screen for AME and in the **View Work Order Details** screen for SWO. These columns will display the Sign Off date and time of the last sign off for the resource group.

Exhibit 1: Identifies the changes in the **View Work & Sign-off Information** screen of **Aircraft Maintenance Execution**

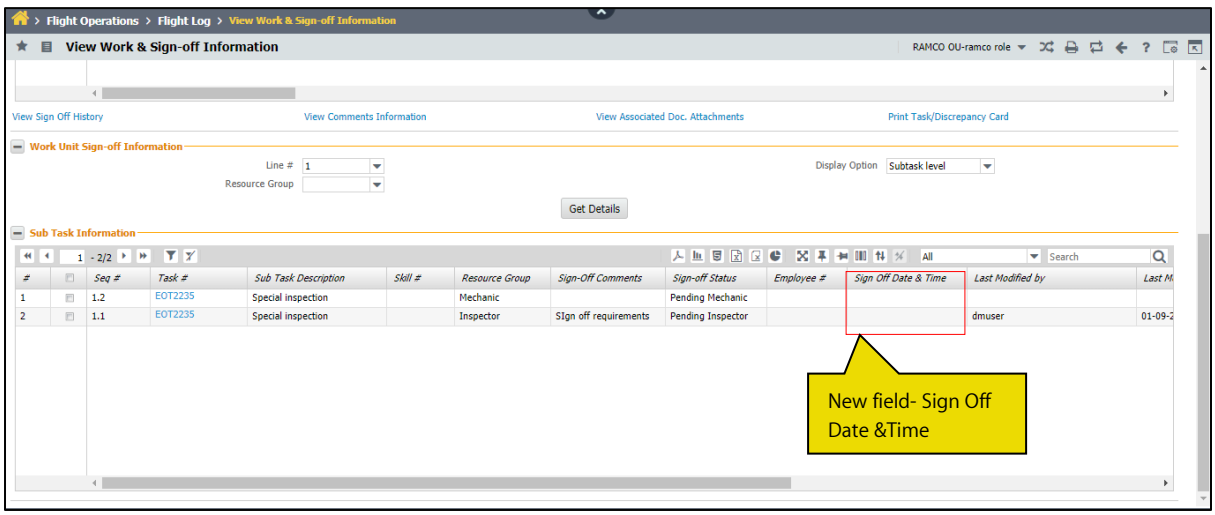
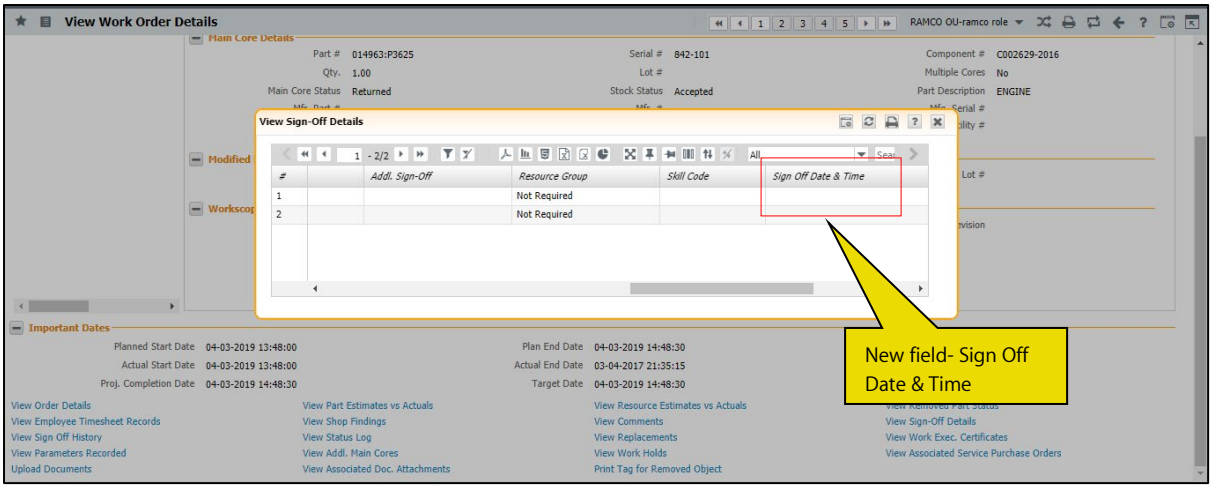


Exhibit 2: Identifies the changes in the **View Sign-Off Details** popup of **Shop Work Order**



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