5.0　Worklist Manager Requirements

Workflow is the progression of deals from role (function) to role where each role corresponds to some part of the management defined business process of implementing a deal from inception to completion. Each role has a **worklist** of deals waiting for processing by the person filling the role.

5.1.　Introduction

The Worklist Manager is an IOP-Contract Common Utility that creates worklist entries representing deals and presents them as a worklist for each role based upon the deal status.

This section of the requirements describes:

- the structure of worklists
- how worklists are created
- how worklists are managed
- how the Worklist Manager interacts with the IOP-Contract application
- how application servers interact with the Worklist Manager

5.1.1.　Application Server Structure

An important point to note is that IOP-Contract includes IOP Common Utility Servers, IOP Application Servers, and specific Contract Application Servers.
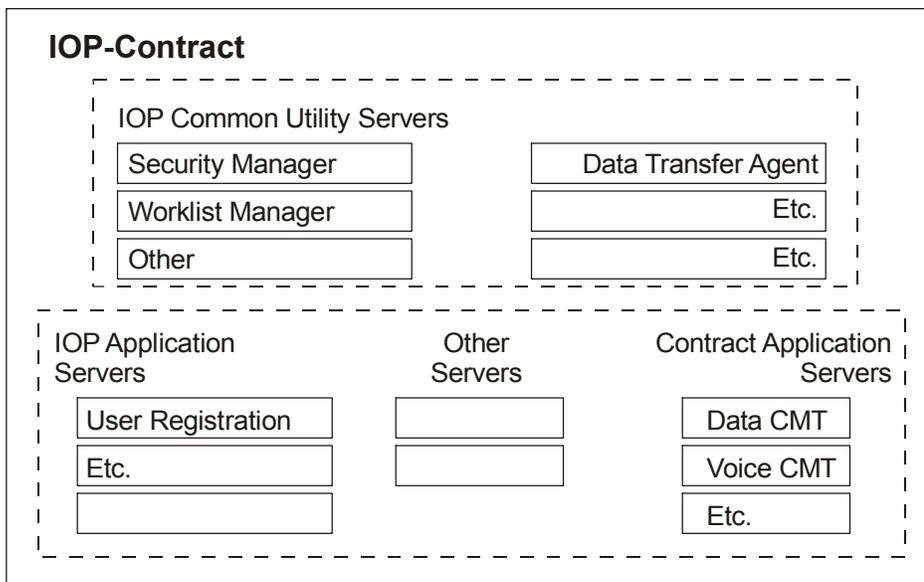
- IOP Application Servers are internal to IOP. They perform functions that are used directly by IOP, or as services to Contract Application Servers. The Worklist Manager and all IOP Common Utility Servers interact with IOP Applications Servers in exactly the same way that they interact with Contract Application Servers.

- Contract Application Servers perform business functions. They use IOP common utility servers such as Worklist Manager to perform services that are common to all Contract Application Servers.

- For the Worklist Manager, the only difference between IOP Application Servers and Contract Application Servers lies in the definition of a "deal:"

- For Contract Application Servers, a "deal" is a contract.
- For IOP Application Servers, a "deal" is a convenient entity that requires workflow management using worklists.

All types of application servers have the same structure:
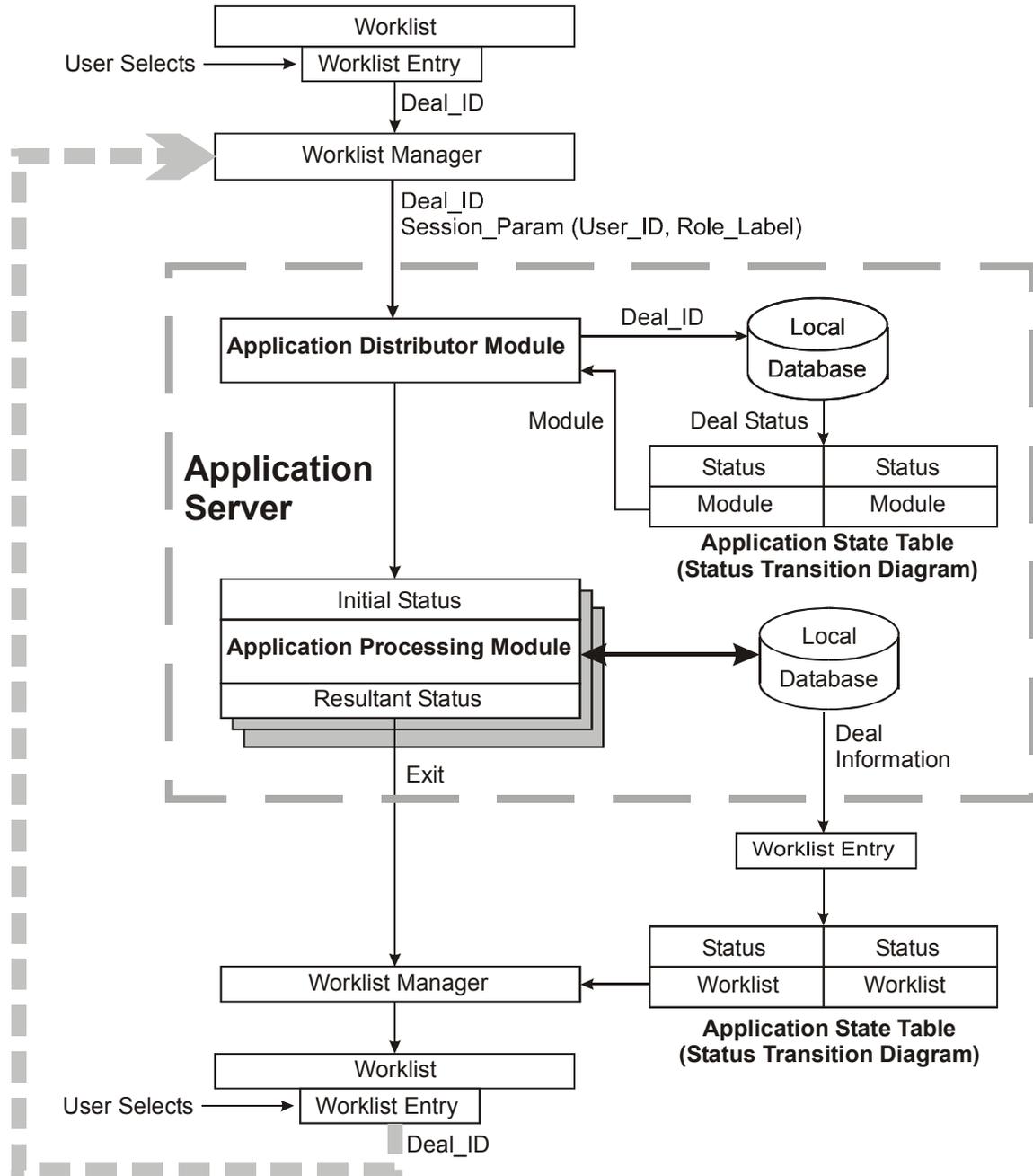
Both types of application servers have the same structure:

- An Application Distributor Module (main entry point) receives control from the Worklist Manager with the Deal_ID and User_ID. Based on the deal status, the application distributor module sends the deal to the correct Application Processing Module.

- Each Application Processing Module receives deals having specific status' based on the application State Transition Diagram, processes the deals until a status change occurs, and updates the local database. When the user exits the application, the Worklist Manager generates a new worklist.

An application server may also receive control through a data transfer from another system (such as Configurator). In that case, the action taken depends upon the processing agreed upon between the communicating systems (such as creating a deal). When the user exits the application, the Worklist Manager generates a new worklist.

5.1.2. Worklist Management and Application Structure

Worklist management is a cooperative effort between the Worklist Manager and the Application Server.

- The IOP database tables used by the Worklist Manager include the equivalent of an application State Transition Diagram. The Worklist Manager state table relates deal status values to specific worklists.

- The Worklist Manager moves a "deal" from role to role by displaying the corresponding worklist entry on the worklist for the role. This is completely controlled by the status of the deal.

- When a user clicks on a worklist entry, the Worklist Manager passes the Deal_ID and User_ID to the application entry point (Application Distribution Module). It is then the responsibility of the application server to determine which Application Processing Module to use based on the deal status in the local database.

- When the Application Processing Module completes processing the deal, it updates the deal status in the local database.

- When the user is finished, the user returns to the worklist by clicking the application workbench 'Exit' or 'Save & Exit' button.

- The cycle completes when the Worklist Manager creates a new worklist by collecting data from the application server database and moves the worklist entry to the worklist for a new role based on the status.

5.2. Worklist Functionality

A **worklist** is a list of deals that the user can act upon, refer to, or track.

5.2.1. Worklist Entries

A worklist entry represents a deal at some stage in the deal's life corresponding to the deal status. A worklist entry appears on the worklists of a specific user either because that user is the next to process the deal, or because that user has some interest in tracking the progress of the deal.

Req 5-1. A worklist entry contains enough information about a deal for the user filling a role to determine which deal to select and process next.

Req 5-2. Each IOP-Contract user has direct access to the deals and information necessary to perform his or her job through one or more worklists.

Req 5-3. A single worklist may contain both deals waiting for action by the user, and tracking information such as the status of deals initiated by the user, but not currently eligible for action by the user.

Req 5-4. Most worklists are limited to a single offer group and a single user role within that offer group. For example, a Data Networking Account Executive (DNAE) has a "My Offers" worklist. The DNAE can select deals to work on, and determine the status of any of the deals he or she has worked on, from the "My Offers" worklist.

Req 5-5. Some roles have more than one worklist available to help them perform their jobs. For example, the DNAE may also see his or her deals in relation to other deals in the branch on the "Branch Offers" worklist, but can only select his or her own deals to work on from that list.

5.2.2. Worklist Format

A worklist is displayed in the worklist area. The worklist area contains two parts:

Req 5-6. A function bar with labels and controls:

Offer Group	Role	Worklist Select			Customize Worklist
Data GCT	DNAE	My Offers		▼	

The function bar contains a drop-down list (Worklist Select) and a function button (Customize Worklist).

Req 5-7. The worklists available to the user are listed in the Worklist Select drop-down list.

Req 5-8. Selecting a worklist from the drop-down list causes that worklist to be displayed in the display area.

Req 5-9. The Customize Worklist button opens the Customize Worklist dialog box.

The user can specify the logon worklist and the color scheme.

Req 5-10. Custom selections are stored across sessions, and apply until changed again.

Req 5-11. The worklist display area:

Offer Group	Role	Worklist Select				Customize Worklist
Data GCT	DNAE	My Offers ▼				

Branch	Customer	Offer	Created	Status	Modified
NJ Sourth	Karres Planning Corporation	FRS 20	06/27/1999	ATP	09/21/1999
NJ Sourth	The DocShop	BAT 10	09/13/1999	Pending CM Auto	09/13/1999
NJ Sourth	Writing Pros	T1	07/20/1999	Pending CM	08/31/1999

Worklist Workbench (Including Worklist Function Bar and Worklist Display Area)

The worklist is an array of rows and columns. Each row represents a single deal. Each column contains a descriptive field related to the deal.

Req 5-12. Many worklists use a common format with the same columns. This simplifies working with different offer groups.

Req 5-13. For offer group-specific requirements, the format of each worklist can be adjusted.

5.2.3. *The Available Worklists*

Each role has one or more worklists that provide convenient organization of the deals.

Req 5-14. Before a user can use the contract creation tools included in IOP-Contract, the user must register for the offer group(s) and role(s).

A special administrator approves the registration and authorizes the user for the offer group(s) and role(s).

Req 5-15. Most users have only one specific role (for example, Creator01), but may have the same role across different offer groups. For example, the "Creator01" role in the "Voice GCT" offer group is the Account Executive (AE) while in the "Data GCT" offer group, the "Creator01" role is the DNAE.

Req 5-16. Each time the user logs on to IOP-Contract, the contents of the Worklist Select drop-down list is updated based on the available worklists for each offer group and role the user has registered.

Example:

In the Data GCT offer group, for the DNAE role, the "My Offers" worklist contains only deals originated by the specific user.

On the "Branch Offers" worklist, all deals originated within the branch are listed, but only the deals originated by the specific user can be selected for action.

5.2.4. *Horizontal and Vertical Roles, and Combination Worklists*

In most cases, selecting a worklist selects both the offer group and the role at the same time. There are some special cases worth mentioning:

Req 5-17. When the user has the same role in multiple offer groups (called "horizontal roles"), a "combination" list can be selected that shows the role, but not the offer group. (An example of horizontal roles is "Creator01" or "DNAE" in "Data GCT" and also "Creator01" or "AE" in "Voice GCT.")

Req 5-18. A horizontal "combination" worklist displays an asterisk (*) in the Offer Group section of the Worklist Select drop-down list.

The user can determine the offer group associated with a specific deal by looking at the offer name if it is displayed.

Req 5-19. When the user has multiple roles in the same offer group (called "vertical roles"), a "combination" list can be selected that shows the offer group, but not the role. (An example of vertical roles is "Approver01" or "FMM" and also "Approver02" or "CPM," both "in "Data GCT.")

Req 5-20. A vertical "combination" worklist displays an asterisk (*) in the Role section of the Worklist Select drop-down list.

The user can determine the role associated with a specific deal by looking at the deal status if it is displayed.

Req 5-21. Horizontal and vertical roles cannot be combined on the same worklist.

5.2.5. *The Logon Worklist*

The user can choose which worklist will display at logon by using the "Customize Worklist" function button.

Req 5-22. If the user has logged on to the IOP-Contract system before, and has not selected a specific worklist as the logon default, the "last-used" worklist is selected.

Req 5-23. If the user has used the Custom function button to set a specific worklist as the logon default, the specified worklist is used until the user makes a different choice (including "last-used").

Req 5-24. If the user has never logged onto IOP-Contract before, Worklist Manager will choose the first worklist of the available worklists for that user to display.

5.2.6. *Worklist Content Selection*

Selecting a worklist causes the worklist to be created. Until that time, the entries for the worklist have not been selected from the list of all possible worklist entries.

Req 5-25. The entries on a worklist depends on who (role) needs to see the deal and what they need to do with it in the business process.

Req 5-26. The "status" of a deal determines where it is in the business process. The status also determines which worklist(s) contain the deal.

Req 5-27. To create a worklist, Worklist Manager retrieves entries from the list of all possible entries using a filter that specifies the correct offer group, status, and other information. (For example, the "My Offers" worklist is restricted to the user while the "My Branch" worklist is restricted to the branch.) The resulting list of deals is the base worklist.

Worklist Manager uses a "view" of the data contained in local, offer group databases to create and select worklist entries. For offer group application servers that do not use Oracle, Worklist Manager polls the application server for data. This avoids code for existing Oracle-based application servers.

Req 5-28. Finally, Worklist Manager sorts the deals in the order specified for the worklist.

5.2.7. Worklist Display

After Worklist Manager has determined what deals appear on the worklist, and the order of presentation, Worklist Manager builds the actual worklist display. The columns displayed and the order in which they are presented is contained in a database table.

5.2.8. Selecting a Deal

Selecting a deal (usually done by clicking anywhere on the deal) sends a request to the appropriate offer group application server. Usually, the offer group application server opens the deal page. There are some variations:

Req 5-29. If the deal is in "tracking" mode, the user can see the deal on the worklist, but cannot open the deal. (The offer group application returns to the worklist without opening the deal.) The offer group determines whether the deal is "tracking" mode for the specific user role requesting the deal page.

Req 5-30. If the deal is in "active" mode or "information" mode, the deal page is opened in the offer group application. The offer group determines whether the deal is read-only ("information" mode) or editable ("active" mode) for the specific user role requesting the deal page.

Req 5-31. On combination lists, selecting a deal for a horizontal combination (same role in multiple offer groups) also selects the offer group associated with the deal. Selecting a deal for a vertical combination (multiple roles in the same offer group) also selects the role associated with the deal's current status.

5.2.9. Customization of Worklists

User customization is limited to specifying the default worklist to be used when logging on to IOP-Contract, and to specifying the color scheme to be used.

5.3. Using Worklist

This section discusses how worklists are used and how using worklists results in calls to the Workflow Manager.

5.3.1. Selecting Worklists

To select a worklist, the user must be at the worklist area with the worklist controls displayed.

Req 5-32. When the user logs on, he or she is automatically put in the worklist area with an appropriate worklist displayed.

Req 5-33. When the user selects a deal or another function, the worklist disappears and the appropriate deal page or workbench appears. The IOP Application Server or Contract Application Server 'Application Distribution Module' receives the Deal_ID and User_ID from the Worklist_Entry and routes the information to the correct Application Processing Module.

Req 5-34. When the user exits the application, a 'Refresh Worklist' request is sent to the Worklist Manager. The worklist the user was previously viewing (and the worklist controls) reappear. (If the user uses the Back button on the browser, the worklist is not refreshed.)

Req 5-35. To select a different worklist, the user returns to the worklist area by closing the deal page or workbench. Selecting a worklist generates a 'Refresh Worklist' request to the Worklist Manager.

Offer Group	Role	Worklist	
Data GCT	DNAE	My Offers	▼

To select a new worklist:

1. Click the down arrow to display the drop-down list.

2. Click on the desired worklist.

3. The drop-down list closes and the selected worklist displays.

5.4. Worklist Manager Capabilities

The Worklist Manager uses several internal modules to provide various capabilities to itself and to other applications:

- Generate available worklists

  The **Worklist Selection Module** creates the contents of the Select Worklist (*Available Worklists section*) drop-down list when the user logs on. (See requirements in *5.4.1 Worklist Selection Module* on page 11.)

- Select Logon worklist

  Saves the user chosen worklist or "last used" worklist for automatic selection at logon. (This is near the last step in *5.4.3 Worklist Display Module* on page 15.)

- Select different worklist

  Changes the current worklist to the worklist selected from the Worklist Select drop-down list. It uses the *Worklist Entries Module* including the *Base Filter/Base Worklist section* and the *Base Sort/Sorted Final Worklist section*. It is normally followed by the *Worklist Display Module* to display (or redisplay) the worklist. (See requirements in *5.4.2 Worklist Entries Module* on page 13 and *5.4.3 Worklist Display Module* on page 15.)

- Refresh current worklist

  The **Worklist Entries Module** generates (or regenerates) worklist entries for the current worklist. It includes the *Base Filter/Base Worklist section*, and the *Base Sort/Sorted Final Worklist section*. It is normally followed by the *Worklist Display Module* to display (or redisplay) the worklist. (See requirements in *5.4.2 Worklist Entries Module* on page 13 and *5.4.3 Worklist Display Module* on page 15.)

- Display current worklist

  The **Worklist Display Module** formats and displays current worklist entries. (See requirements in *5.4.3 Worklist Display Module* on page 15.)

- Customize worklist

  The **Customize Worklist Module** uses the *Customize Worklist* dialog box to store user selections in the user profile. (See requirements in *5.4.4 Customize Worklist Module* on page 17.)

5.4.1. *Worklist Selection Module*

The Worklist Manager uses its "Worklist Selection Module" to create the list of available worklists that is displayed in the Worklist Select drop-down list and to select the displayed worklist as follows:

Worklist Selection Module
(Available Worklists)
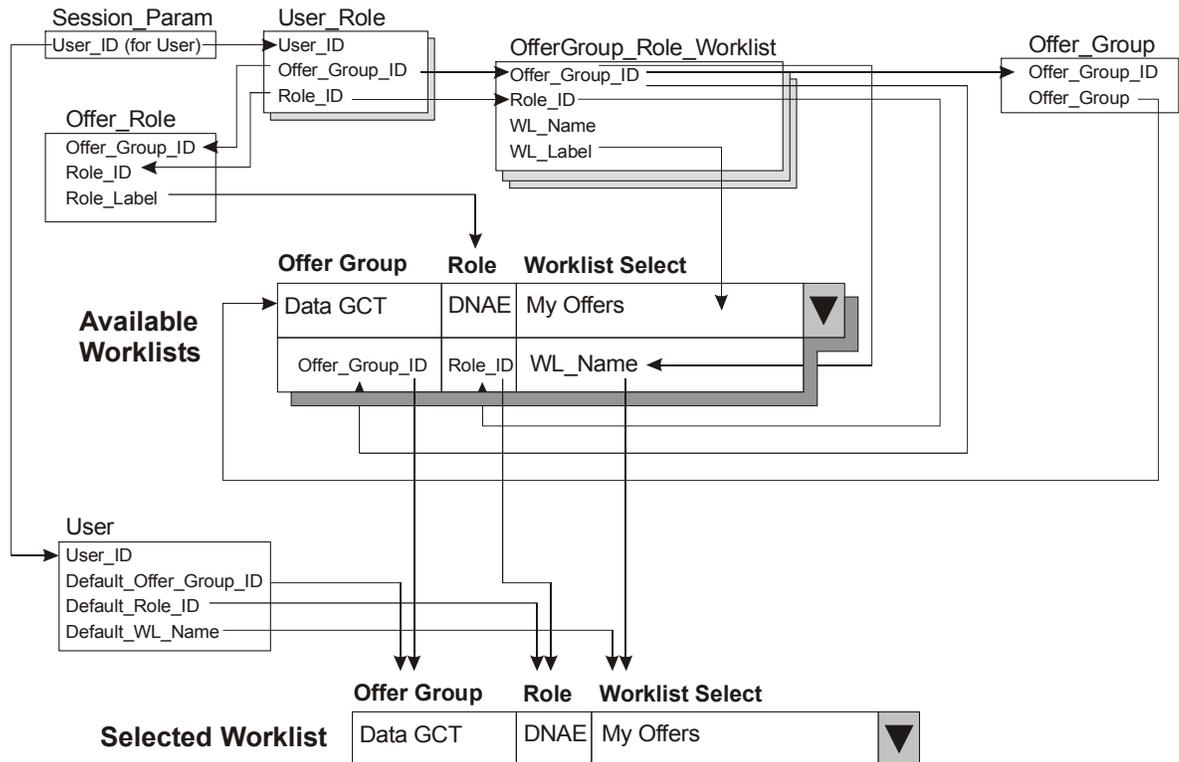
Req 5-36. Session_Param.User_ID is used to select entries from User_Role.

Req 5-37. User_Role.Offer_Group_ID and User_Role.Role_ID are used to select corresponding entries from OfferGroup_Role_Worklist.

Req 5-38. OfferGroup_Role_Worklist.WL_Label becomes field 3 of the Worklist Select drop-down list. OfferGroup_Role_Worklist.WL_Name becomes field 6 (not displayed) of the Worklist Select drop-down list.

Req 5-39. User_Role.Offer_Group_ID is used to select corresponding entries from Offer_Group. Offer_Group.Offer_Group becomes field 1 of the Worklist Select drop-down list. ('IOP') User_Role.Offer_Group_ID becomes field 4 (hidden) of the Worklist Select drop-down list.

Req 5-40. User_Role.Offer_Group_ID and User_Role.Role_ID are used to select corresponding entries from Offer_Role. Offer_Role.Role_Label becomes field 2 of the Worklist Select drop-down list. ('UAA') User_Role.Role_ID becomes field 5 (hidden) of the Worklist Select drop-down list.

Req 5-41. Session_Param.User_ID is used to select User.

Req 5-42. User.Default_Offer_Group_ID, User.Default_Role_ID, and User.Default_WL_Name are compared to User_Role.Offer_Group_ID (field 4), User_Role.Role_ID (field 5), and OfferGroup_Role_Worklist.WL_Name (field 6). The matching entry is set as the selected entry in the drop-down list.

Req 5-43. User.Worklist_Selection_Flag determines whether the "Default" or "Last" worklist selections are used.

Req 5-44. Whenever a worklist is selected, Worklist Manager updates the "Last" worklist information. If User.Worklist_Selection_Flag is set to 'Last Used', the entries are copied to the "Default" information. If the flag is set to 'Default', the entries are not copied. Therefore, the "Default" information always contains the worklist to be used.

Req 5-45. If User.Default_Offer_Group_ID, User.Default_Role_ID, and User.Default_WL_Name are blank or null (first time user has logged on), they are filled in with values for the first available worklist.
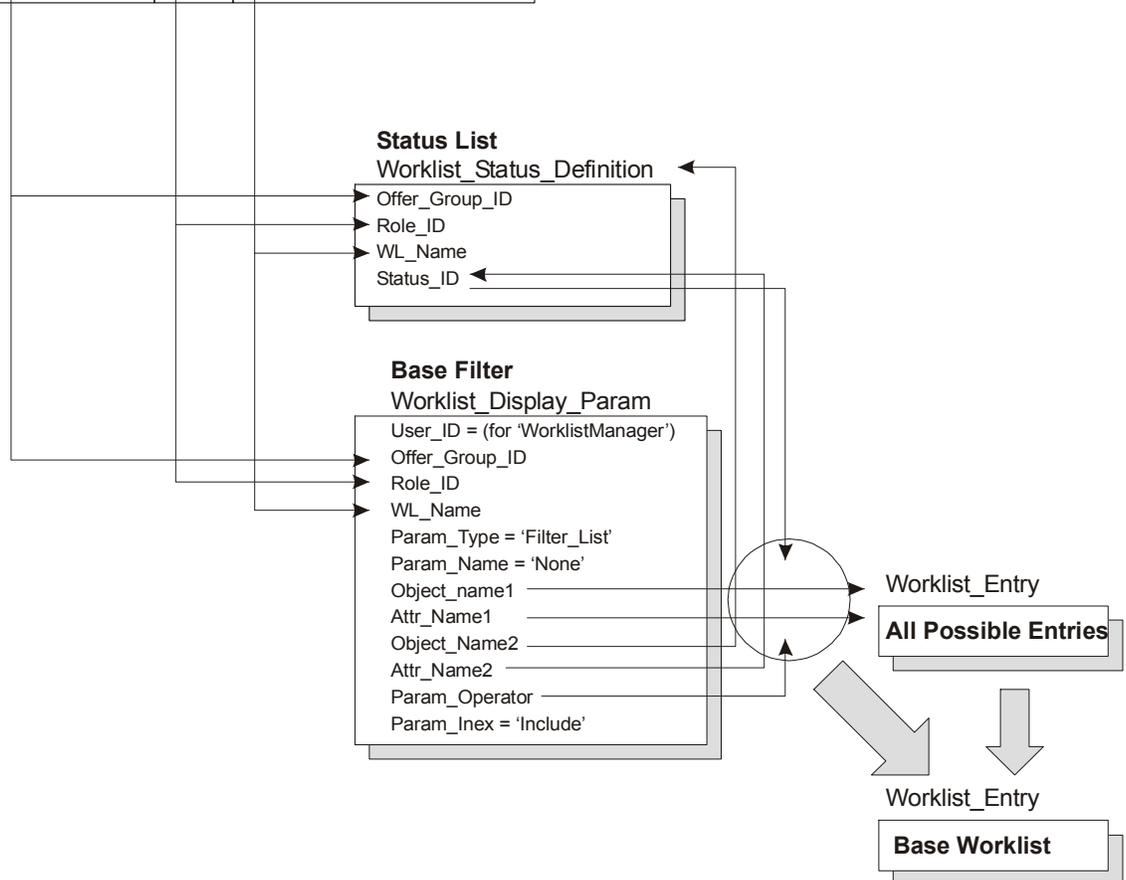
5.4.2. *Worklist Entries Module*

The Worklist Manager uses its "Worklist Entries Module" to select the worklist entries for display.

Worklist Entries Module
(Base Filter/Base Worklist)

Req 5-46. The selected worklist determines the Offer_Group_ID, Role_ID, and WL_Name. These in turn select a corresponding set of Worklist_Status_Definition objects, each of which has a Status_ID.

Req 5-47. The Offer_Group_ID, Role_ID, and WL_Name together with Param_Type = 'Filter_List' and Param_Name = 'None', select a corresponding set of Worklist_Display_Param objects, which together define the base filter for the worklist.

Req 5-48. The base filter for the worklist consists of one or more <Object.attribute> <operator> <Object.attribute> triples.

Req 5-49. Worklist_Entry is an IOP-Contract database view of the other application local database data fields. The resulting set of worklist entries is called the *base worklist.*

Worklist Entries Module
(Base Sort/Sorted Final Worklist)

Selected Worklist

Offer Group	Role	Worklist Select	
Data GCT	DNAE	My Offers	▼
Offer_Group_ID	Role_ID	WL_Name	

User Sort
Worklist_Display_Param

User_ID (for 'Worklist Manager')
Offer_Group_ID
Role_ID
WL_Name
Param_Type = 'Sort_List'
Param_Name = 'None'
Object_name1
Attr_Name1
Object_Name2
Attr_Name2
Param_Operator

Worklist_Entry
Final Worklist

Worklist_Entry
Sorted Final Worklist
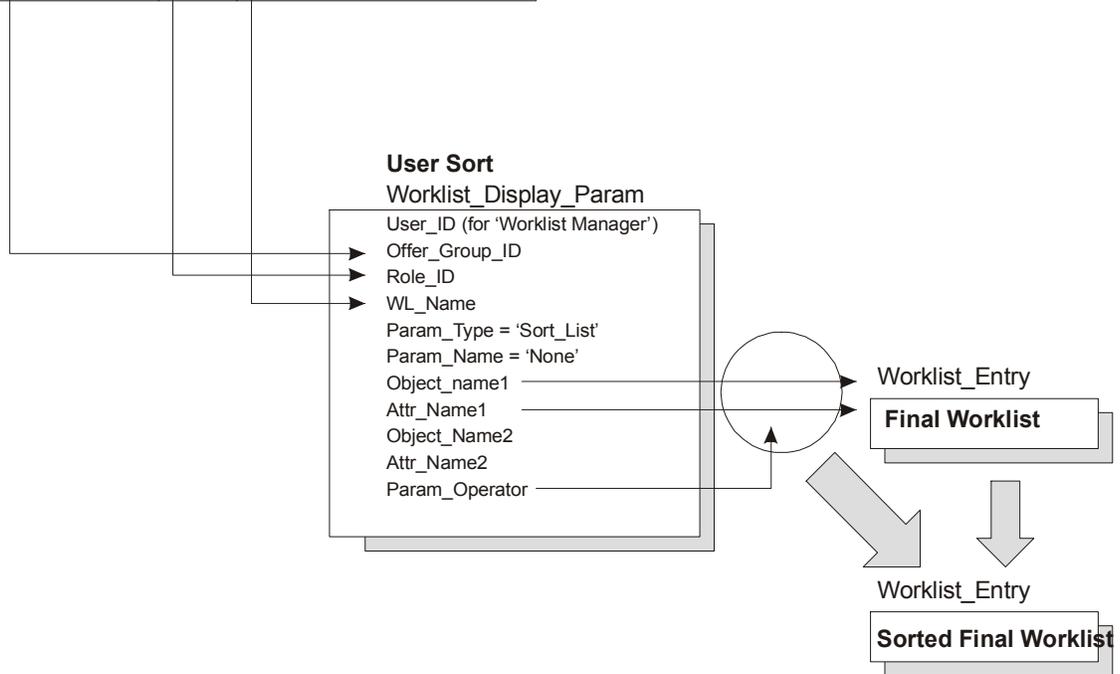
Req 5-50. The selected worklist determines the Offer_Group_ID, Role_ID, and WL_Name.

Req 5-51. The Offer_Group_ID, Role_ID, and WL_Name together with Param_Type = 'Sort_List' and Param_Name = 'None', select a corresponding set of Worklist_Display_Param objects, which together define the base sort for the worklist.

Req 5-52. The base sort for the worklist consists of one or more ordered <Object.attribute> <'Asc'|'Desc'> pairs.

Req 5-53. The final worklist is sorted according to the sort found. The result is the *Sorted Final Worklist.*

5.4.3. *Worklist Display Module*

The Worklist Manager uses its "Worklist Display Module" to display the worklist entries on the *Sorted Final Worklist.*

Worklist Display Module
(One Row)
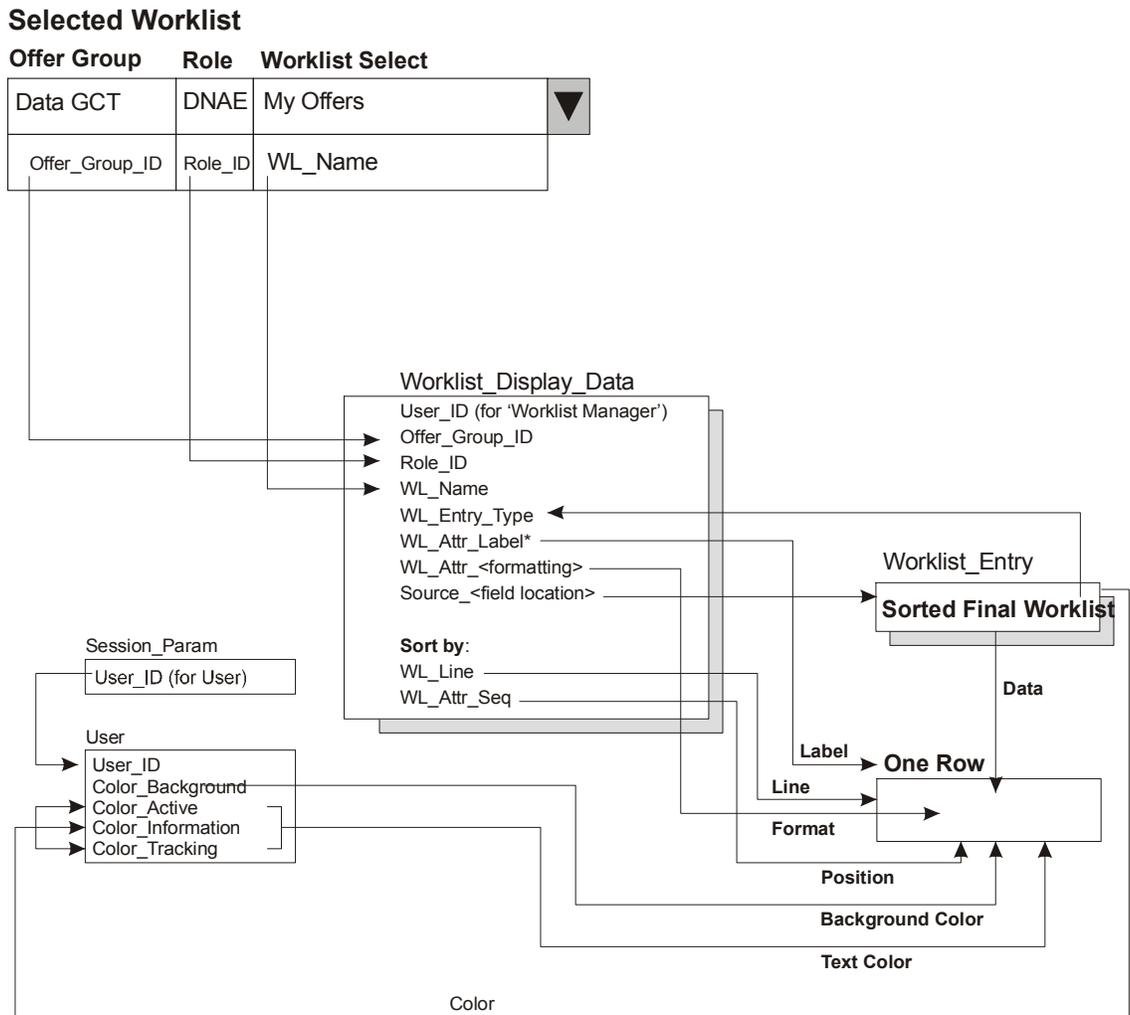
Req 5-54. The User_Role.Offer_Group_ID, User_Role.Role_ID, OfferGroup_Role_Worklist.WL_Name and Worklist_Entry.WL_Entry_Type are used to select a set of Worklist_Display_Data objects.

Req 5-55. For each worklist entry, the Worklist_Display_Data objects are sorted by WL_Line, ascending, and then by WL_Attr_Seq, ascending. They are processed in the sorted order.
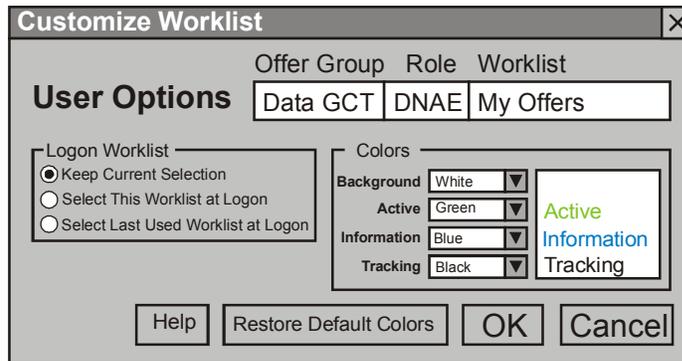
Req 5-56. Each Worklist_Display_Data object defines one field of output.

Req 5-57. WL_Line determines the line
WL_Attr_Seq determines the order of the field
WL_Attr_Len determines the display field length
Based on the value of WL_Attr_Len,
    WL_Attr_Label1 (length 10 or less),
    WL_Attr_Label2 (length 11 to 20), or
    WL_Attr_Label3 (length 21 or more) becomes
    the field label
WL_Attr_Type determines the display field type
WL_Attr_FM provides a format mask
Source_Object_Name defines the source object
Source_Attr_Name defines the source attribute
Source_Attr_Type defines the source type
Fixed_Value is used as the source if Source_Object_Name/Source_Attr_Name
    are not specified.

Req 5-58. User.color_background determines the background color for all rows.
Worklist_Entry.color selects one of: User.color_active, User.color_information, and User.color_tracking to determine the color of the text for the current row.

Req 5-59. When the set of Worklist_Display_Data objects has been processed, one row (possibly having multiple lines) is ready for display.

Req 5-60. Each row is displayed by the same process. Note that the WL_Entry_Type can change from row to row.

Req 5-61. When all rows are ready for display, the "Worklist Display Module" fills in the Session_Param.WL_Name.

Req 5-62. The "Worklist Display Module" fills in the worklist name in the user profile. The following fields are set:

User.Last_Offer_Group_ID
User.Last_Role_ID
User.Last_WL_Name

Req 5-63. If the User.Worklist_Selection_flag is set to 'Last', the following fields are also set:

User.Default_Offer_Group_ID
User.Default_Role_ID
User.Default_WL_Name

Note: The logon worklist is always taken from the set of fields:

User.Default_Offer_Group_ID
User.Default_Role_ID
User.Default_WL_Name

unless these fields are not set (the user has never logged on before). These fields will identify a specific worklist if User.Worklist_Selection_flag is set to 'Default' or will define the last used worklist if User.Worklist_Selection_flag is set to 'Last'.

Req 5-64. Then the "Worklist Display Module" displays the worklist.

5.4.4. *Customize Worklist Module*

The Worklist Manager uses its "Customize Worklist Module" to display the Customize Worklist dialog box and store the user selections in the user profile.

Req 5-65. Clicking the Customize Worklist button in the worklist function bar opens the Customize Worklist dialog box.

```
┌─────────────────────────────────────────────────────────┐
│ Customize Worklist                                    [×] │
│                       Offer Group  Role   Worklist        │
│   User Options       ┌──────────┬──────┬──────────┐      │
│                      │ Data GCT │ DNAE │ My Offers │      │
│                      └──────────┴──────┴──────────┘      │
│  ┌Logon Worklist──────────┐  ┌Colors──────────────────┐ │
│  │ ◉ Keep Current Selection│  │Background │White   │▼│  │ │
│  │ ○ Select This Worklist  │  │  Active   │Green   │▼│ Active      │
│  │   at Logon              │  │Information│Blue    │▼│ Information  │
│  │ ○ Select Last Used      │  │ Tracking  │Black   │▼│ Tracking    │
│  │   Worklist at Logon     │  │                        │ │
│  └─────────────────────────┘  └────────────────────────┘ │
│              ┌──────┐ ┌─────────────────────┐ ┌────┐ ┌──────┐ │
│              │ Help │ │Restore Default Colors│ │ OK │ │Cancel│ │
│              └──────┘ └─────────────────────┘ └────┘ └──────┘ │
└─────────────────────────────────────────────────────────┘
```

Req 5-66. The currently selected worklist is displayed at the top right of the *Customize Worklist* dialog box.

Req 5-67. A set of three option buttons is provided for user selection of the logon worklist.

> **Req 5-68.** The "Keep Current Selection" option button is selected by default and causes no action when the **OK** button is clicked.

> **Req 5-69.** The "Select This Worklist at Logon" option button causes User.Worklist_Selection_Flag to be set to 'Default' when the **OK** button is clicked.
>
> > When User.Worklist_Selection_Flag = 'Default', the current worklist is selected at logon.

> **Req 5-70.** The "Select Last Used Worklist at Logon" option button causes User.Worklist_Selection_Flag to be set to 'Last' when the **OK** button is clicked.
>
> > When User.Worklist_Selection_Flag = 'Last', the last used worklist is selected at logon.

Req 5-71. A set of four drop-down lists and a display panel is provided for user selection of display color scheme.

> **Req 5-72.** The display panel shows the selected background color as its background. The word "Active" is shown in the selected active color. The word "Information" is shown in the selected information color. The word "Tracking" is shown in the selected tracking color.

> **Req 5-73.** The initial selections for the drop-down lists are taken from User.color_background, User.color_active, User.color_information, and User.color_tracking respectively. If these fields have not been previously set, the default colors of white, green, blue, and black are used respectively.

Req 5-74. Each drop-down list contains the following 16 standard values:

(Which set to be used to be determined.)

Word colors	HTML colors
Black	Aqua
Blue	Black
Turquoise	Blue
Bright Green	Fucia
Pink	Gray
Red	Green
Yellow	Lime
White	Maroon
Dark Blue	Navy
Teal	Olive
Green	Purple
Violet	Red
Dark Red	Silver
Dark Yellow	Teal
Gray 50%	White
Gray 25%	Yellow

Req 5-75. The current selection from the drop-down lists are stored in User.color_background, User.color_active, User.color_information, and User.color_tracking respectively when the **OK** button is clicked.

Req 5-76. Clicking the **Help** button displays an explanation of the *Logon Worklist* option group and the *Colors* selection group.

Req 5-77. Clicking the **Restore Default Colors** button sets the drop-down lists to white, green, blue, and black respectively.

Req 5-78. Clicking the **OK** button sets User.Worklist_Selection_Flag based on the *Logon Worklist* option group, sets User.color_* fields based on the drop-down lists in the *Colors* selection group, and closes the *Customize Worklist* dialog box.

Req 5-79. Clicking the **Cancel** button closes the *Customize Worklist* dialog box without saving user selections.