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# Default Values in MDG Single Object Maintenance UIs based on FPM BOL feeder classes

**Applies to:** MDG7.0 onwards

## Summary

This document describes how to initialize fields of the Single Object Maintenance UI with default values. Different techniques for own UIs and SAP-owned UIs are discussed.

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## Document History

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1.0	First official release of this guide (November 2014)
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## BUSINESS SCENARIO

You would like to initialize some fields of the Single Object Maintenance UI with default values.

The screenshot shows the SAP 'Process Flight Connection 0000' interface. At the top, there are buttons for 'Save', 'Submit', 'Check', 'Undo', 'Redo', and a 'Side Panel' icon. Below this is a 'Change Request' section with an 'Edit' button. It contains two tabs: 'General' (selected) and 'Attachments'. Under 'General Data', there are fields for 'Change Request ID' (3266), '\*Description', 'Priority' (dropdown), 'Due Date' (calendar icon), and 'Reason' (dropdown). Under 'Process Data', there are fields for 'Status' (Changes to Be Executed), 'Current Workitem' (New Change Request), 'Created On/By' (30.06.2014 15:48:03), and 'Type of Change Request' (Create Flight Connection). Below this is a 'Flight Connection' section with an 'Edit' button. It contains fields for '\*Airline', '\*Connection Num...' (0000), '\*Departure Country', '\*Depart. City', and '\*Departure Airport'.

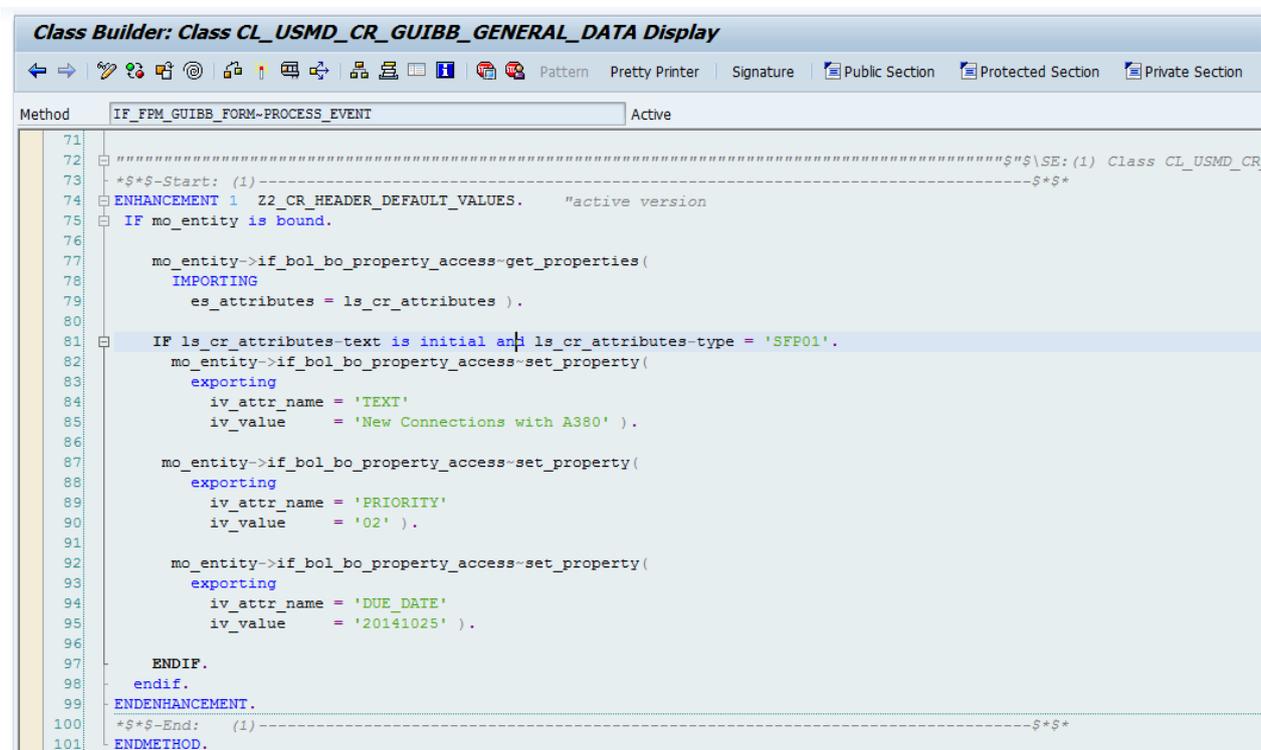
Figure 1

In Figure 1 you see the UI for data model SF, entity type PFLI which we will use to demonstrate different ways of setting default values. The upper UI Building Block (UIBB) for the change request data is not part of the floorplan definition – at least not at design time. It will be added to the floorplan at runtime. The lower UIBB belongs to the floorplan of the currently running application. The UI and its feeder classes can be SAP-owned or customer-owned.

## DEFAULT VALUES IN THE CHANGE REQUEST UIBB

### By Code – Using Enhancements

Solving a task by writing own code always provides the highest flexibility. In the case of the Change Request UIBB, the feeder classes are provided by SAP and you should not modify this code. The best place to add your own code is the end of method `IF_FPM_GUIBB_FORM~PROCESS_EVENT` in class `CL_USMD_CR_GUIBB_GENERAL_DATA`. To do so you can create an implementation of the implicit enhancement point at the end of the method. The change request is represented by the object `mo_entity`. By using method `get_properties` you get a structure which already contains some data like the change request ID and type.



```
Class Builder: Class CL_USMD_CR_GUIBB_GENERAL_DATA Display
Method IF_FPM_GUIBB_FORM~PROCESS_EVENT Active
71
72 *****"$$$SE: (1) Class CL_USMD_CR
73 *$$$-Start: (1)-----"$$$*
74 ENHANCEMENT 1 Z2_CR_HEADER_DEFAULT_VALUES. "active version
75 IF mo_entity is bound.
76
77 mo_entity->if_bol_bo_property_access-get_properties(
78 IMPORTING
79 es_attributes = ls_cr_attributes ).
80
81 IF ls_cr_attributes-text is initial and ls_cr_attributes-type = 'SFP01'.
82 mo_entity->if_bol_bo_property_access-set_property(
83 exporting
84 iv_attr_name = 'TEXT'
85 iv_value = 'New Connections with A380' ).
86
87 mo_entity->if_bol_bo_property_access-set_property(
88 exporting
89 iv_attr_name = 'PRIORITY'
90 iv_value = '02' ).
91
92 mo_entity->if_bol_bo_property_access-set_property(
93 exporting
94 iv_attr_name = 'DUE_DATE'
95 iv_value = '20141025' ).
96
97 ENDIF.
98 endif.
99 ENDENHANCEMENT.
100 *$$$-End: (1)-----"$$$*
101 ENDMETHOD.
```

Figure 2: Implementation of the implicit Enhancement Point 'End of Method'

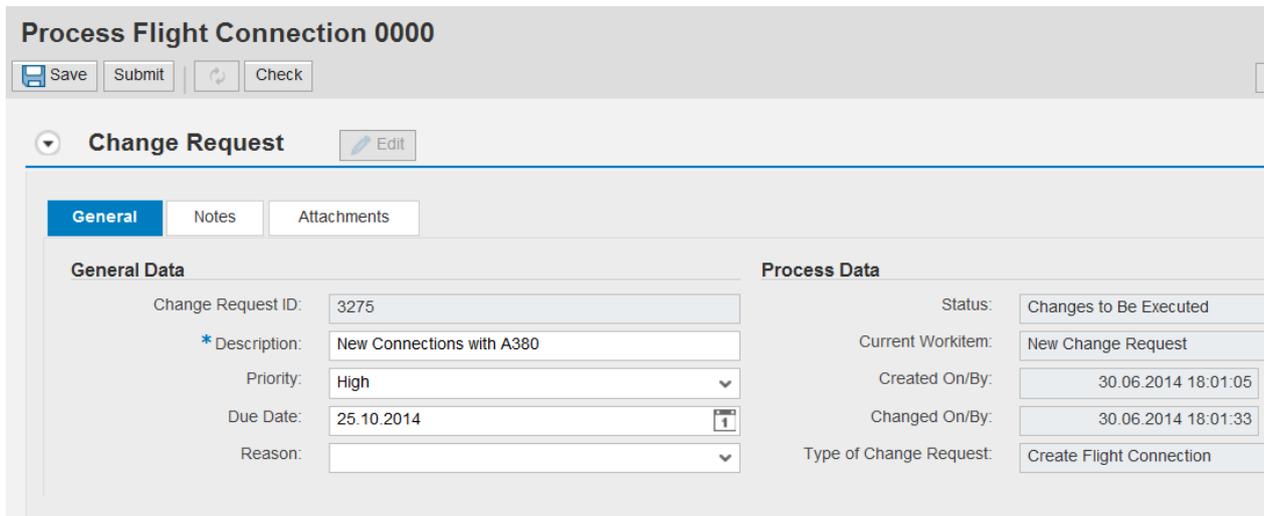


Figure 3: The Change Request UIBB directly after starting the application with the enhancement

Figure 2 shows that you only need just a few lines of code to set default values for the header data of a change request. However, since you have to enhance a method at the end, you might prefer class enhancements over source code enhancements. In this case you would create a Post Exit for method `IF_FPM_GUIBB_FORM~PROCESS_EVENT` with access to private and protected components of `CL_USMD_CR_GUIBB_GENERAL_DATA`.

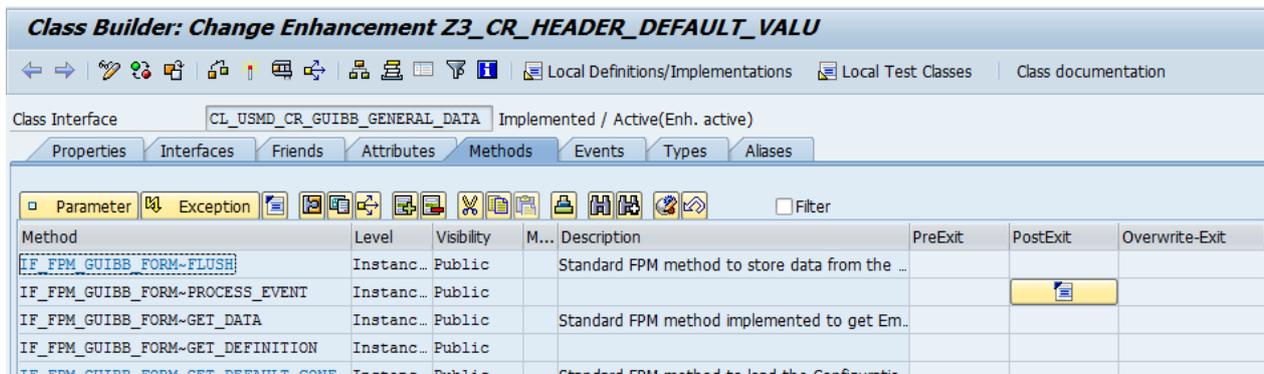


Figure 4: Methods tab with existing class enhancements

```

ABAP Editor: Display Include Z3_CR_HEADER_DEFAULT_VALU====EIMP
Include Z3_CR_HEADER_DEFAULT_VALU====... Active
36  *"      !EV_RESULT type FPM_EVENT_RESULT
37  *"      !ET_MESSAGES type FPMGB_T_MESSAGES .
38  *-----*
39  | DATA ls_cr_attributes TYPE bss_cril_root_attributes.
40
41  IF me->core_object->mo_entity IS BOUND.
42
43      me->core_object->mo_entity->if_bol_bo_property_access~get_properties(
44          IMPORTING
45              es_attributes = ls_cr_attributes ).
46
47  IF ls_cr_attributes-text IS INITIAL AND ls_cr_attributes-type = 'SFP01'.
48      me->core_object->mo_entity->if_bol_bo_property_access~set_property(
49          EXPORTING
50              iv_attr_name = 'TEXT'
51              iv_value     = 'New Connections with A380' ).
52
53      me->core_object->mo_entity->if_bol_bo_property_access~set_property(
54          EXPORTING
55              iv_attr_name = 'PRIORITY'
56              iv_value     = '02' ).
57
58      me->core_object->mo_entity->if_bol_bo_property_access~set_property(
59          EXPORTING
60              iv_attr_name = 'DUE_DATE'
61              iv_value     = '20141025' ).
62
63  ENDIF.
64  ENDIF.
65  ENDMETHOD.                                "IPO Z3 CR HEADER DEFAULT VALU~PROCESS EVENT
66  ENDClass.
    
```

Figure 5: The same code as in Figure 2 but this time as a class enhancement

### By Code – Using Inheritance and Web Dynpro Customizing

Instead of enhancing the existing feeder class, it is also possible to replace it with an own class. This class inherits from the original feeder class and will only redefine relevant methods, in this case `PROCESS_EVENT`. The only limitation of this procedure is that the original feeder class must not be final.

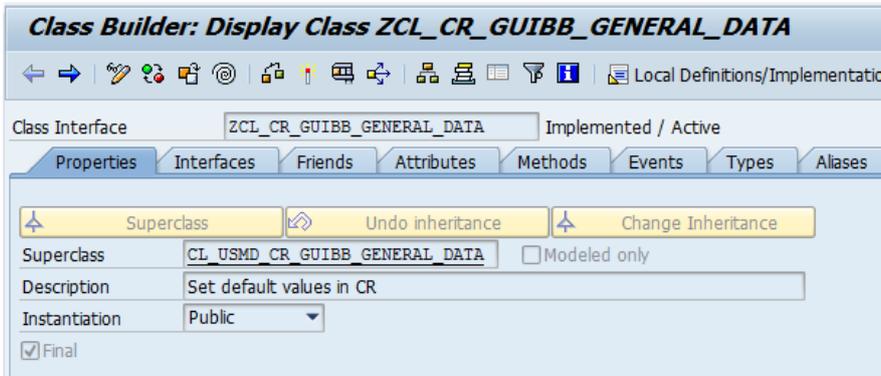


Figure 6: Create a subclass of the feeder class

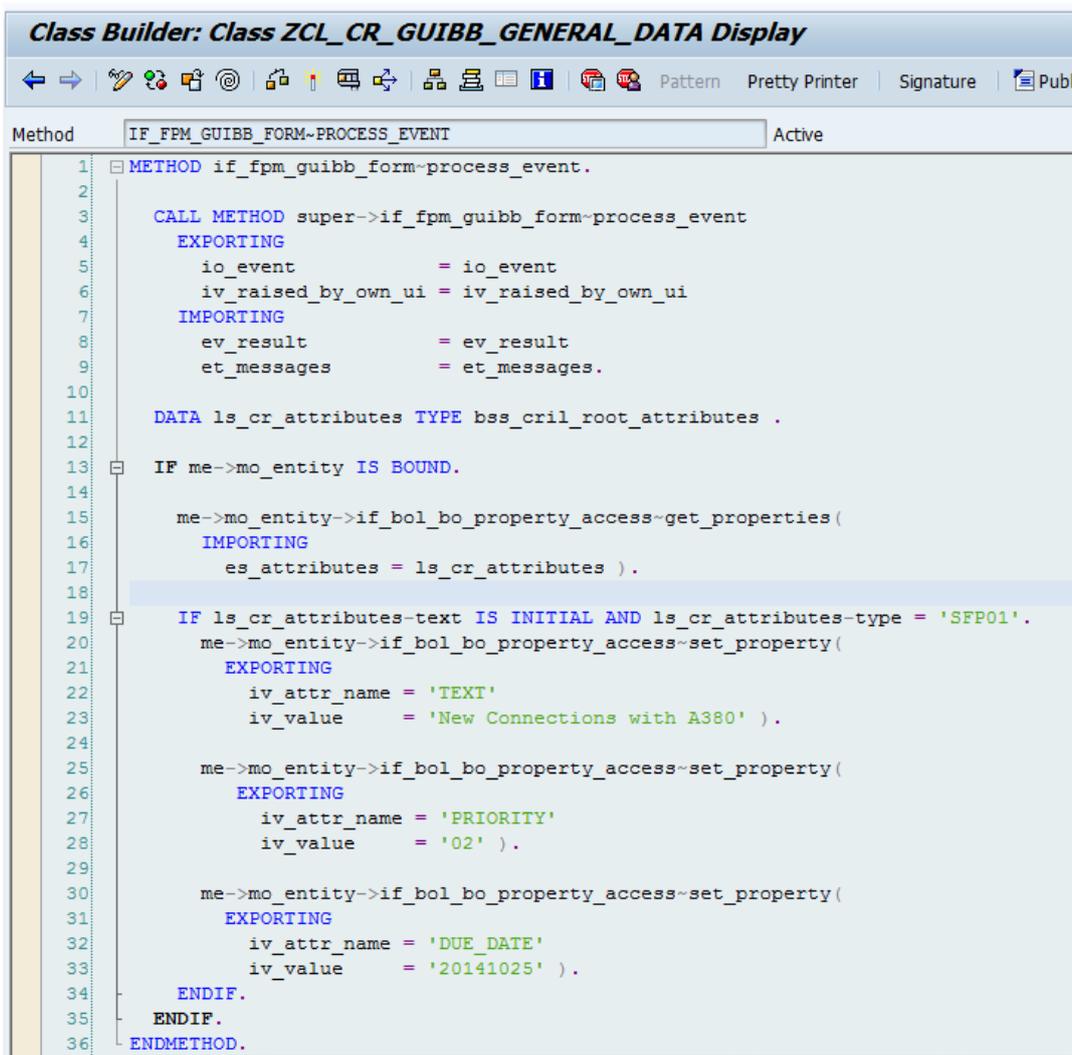


Figure 7: The code of the redefined method. Please pay attention to the call of the super class.

The next task is the link from the UI-configuration to the new feeder class. This can be done by creating a customizing for the UIBB-configuration. This customizing has to be of the same name as the configuration. In the customizing, you can enter a feeder class which overwrites the class from the configuration level.

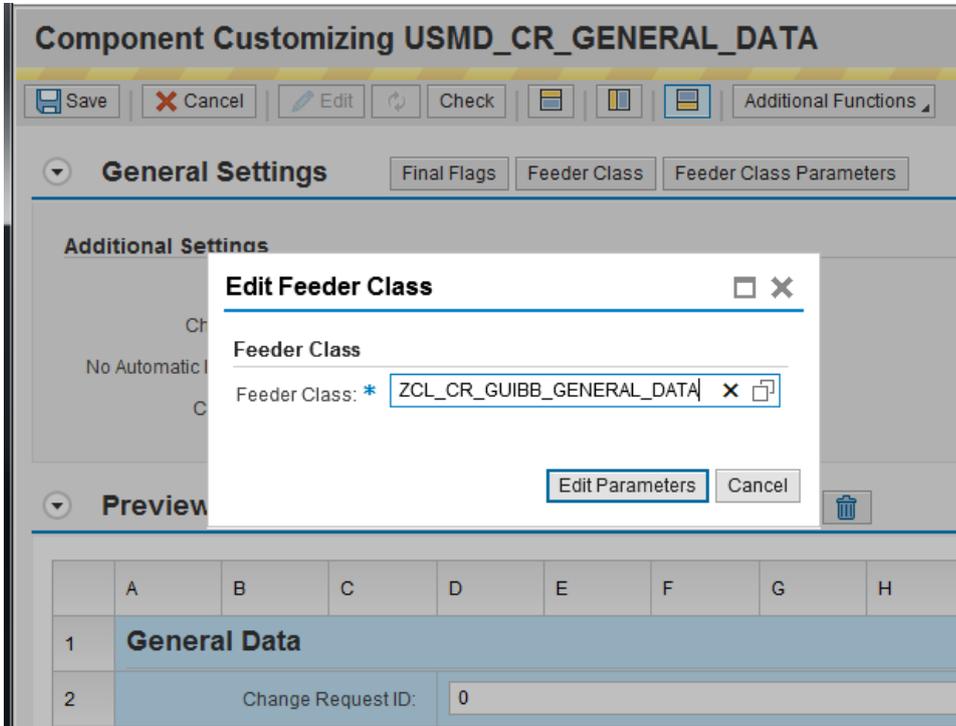


Figure 8: Exchange the feeder class by running the configurator in customizing mode.

Replacing the feeder class via customizing provides you with a modification-free possibility to link your own code with an existing UI. However, customizing means that this solution is client-dependent.

### By Web Dynpro Personalization

The Web Dynpro personalization is available via the context menu of UI elements. Setting default values is supported by input fields and dropdown boxes (only DropDownByKey). However, dropdown boxes don't accept default values if an event handler is registered on the ON\_SELECT event. Since this is the case for the fields *Priority* and *Reason*, you can only populate the input fields of change request UIBB.

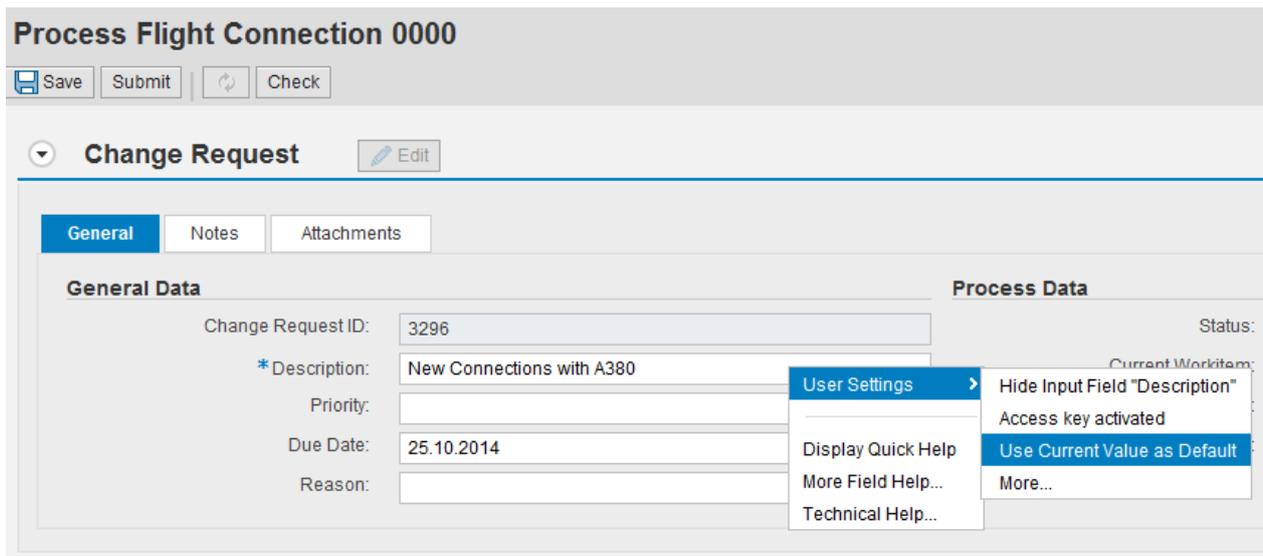


Figure 9: The context menu of an input field

This solution works at user level, which makes it very flexible for the individual user. In contrast to the solution with enhancements, you don't need a development user here. The default values take effect immediately since you set them in the system in which you work in. Transporting these settings is not necessary and also not possible. Default values can't be set when the application runs in administration mode (URL-parameter sap-config-mode=X). In other words, an administrator can't set default values for all users.

Personalization is only possible if it is allowed at system level and not disabled at application level.

Deleting the default value can be done the same way as it was set:

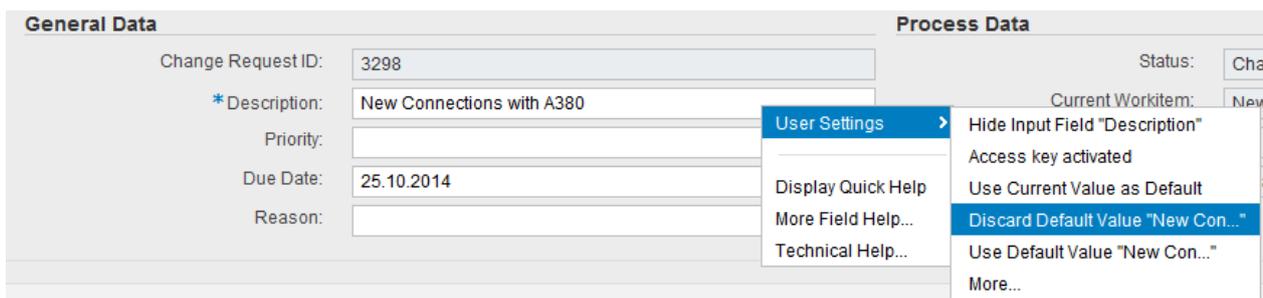


Figure 10: The context menu of an input field with a default value

### **By BAdI**

There is no BAdI which allows you to set default values in the change request header.

### **DEFAULT VALUES FOR THE ENTITY**

#### **By Code**

Setting default values in the UIBB of an entity works very similar to setting values in the UIBB of the change request. There are several possibilities for where to place the code depending on which feeder classes are used. If you use class `CL_MDG_BS_GUIBB_FORM` directly as a feeder class, you can either enhance this class or inherit from it and redefine method `IF_FPM_GUIBB_FORM~PROCESS_EVENT`. The latter one is the better solution and you should create a subclass of `CL_MDG_BS_GUIBB_FORM` if your feeder class does not already inherit from this class. In this case, a programming error only impacts the UIBB using this feeder class instead of all form UIBBs.

If you are dealing with an SAP-owned UIBB, you can introduce your own feeder class by using Web Dynpro customizing, as described on pages 8 and 9.

The following two screenshots show the example code of a feeder class which inherits from `CL_MDG_BS_GUIBB_FORM` and the relevant part of the UIBB for the creation of flight connections.

```

Method      IF_FPM_GUIBB_FORM~PROCESS_EVENT      Active
1  METHOD if_fpm_guibb_form~process_event.
2
3      DATA ls_connection_attributes TYPE /mdg/_s_sf_pp_pfli .
4
5      CALL METHOD super->if_fpm_guibb_form~process_event
6      EXPORTING
7          io_event          = io_event
8          iv_raised_by_own_ui = iv_raised_by_own_ui
9      IMPORTING
10         ev_result         = ev_result
11         et_messages       = et_messages.
12
13  IF mo_entity IS BOUND.
14
15     mo_entity->if_bol_bo_property_access~get_properties (
16         IMPORTING
17         es_attributes = ls_connection_attributes ).
18
19  IF ls_connection_attributes-carr IS INITIAL AND ls_connection_attributes-pfli IS INITIAL.
20
21     mo_entity->if_bol_bo_property_access~set_property (
22         EXPORTING
23         iv_attr_name = 'AIRFFROM'
24         iv_value     = 'FRA' ).
25
26     mo_entity->if_bol_bo_property_access~set_property (
27         EXPORTING
28         iv_attr_name = 'CITYFROM'
29         iv_value     = 'FRANKFURT' ).
30
31     mo_entity->if_bol_bo_property_access~set_property (
32         EXPORTING
33         iv_attr_name = 'COUNTRYFR'
34         iv_value     = 'DE' ).
35  ENDIF.
36  ENDIF.
37  ENDMETHOD.
    
```

Figure 11: A redefinition of PROCESS\_EVENT with the code for default values

The screenshot shows a web-based maintenance interface for a 'Flight Connection'. At the top, there is a dropdown menu for 'Flight Connection' and an 'Edit' button. Below this, the 'Flight Connection' section contains two fields: '\* Airline' (highlighted in red) and '\* Connection Number' (set to '0000'). The 'Start' section contains three fields: '\* Departure Country' (set to 'DE' with 'Germany' as a label), '\* Depart. City' (set to 'FRANKFURT'), and '\* Departure Airport' (set to 'FRA').

Figure 12: The result of the code in Figure 8

In this case, we have set values for an entity which does not yet have a key, which is why the upper two fields are highlighted in red. After populating these fields, the highlighting and the error message in the message area will disappear.

### By Web Dynpro Personalization

In general you can use the Web Dynpro personalization for entity data the same way as for the change request data. Nevertheless, there is one small difference you should remember. The change request UIBB is always in change mode when it appears for the first time, and changes are possible. In contrast, there are scenarios when entity data are in display mode when the UIBB is displayed the first time. This is the case when you click the link with the entity name in the search results.

Pe...	Airline	Connection Number	Description (long ...)	Rank	Departure airport
	LH	0400		100,00	FRA
	LH	0401		100,00	JFK
	LH	0402		100,00	FRA
	LH	0404		100,00	AIY
	LH	0454		100,00	FRA
	LH	0455		100,00	SFO
	LH	1453		100,00	ASP
	LH	1706		100,00	JFK

Figure 13: A search result list in MDG 7.0

After clicking the link '0404', the entity will be displayed. All entity data are in input fields which are in read-only mode. The user has a default value for the unit of measure of the distance, but it will not be set by Web Dynpro because the field is read-only.

**Process Flight Connection**

Save Cancel Delete You Can Also Related Links

Connection Details Edit

**Flight Connection**

Airline: LH  
Connection Number: 0404

**Departure**

Airport: AIY  
Country: US

**Destination**

Airport: JKT  
Country: ID

**Details**

Distance: 1.000,0000   
Flight time: 9:00  
Charter fit:

Figure 14: The entity in display mode

After choosing the *Edit* button, the input fields of non-key fields change to edit mode. Nevertheless, the field for the unit of measure remains blank because the fields are technically the same as before, and Web Dynpro only applies default values when a field is displayed for the first time.

Connection Details Edit

**Flight Connection**

Airline: LH  
Connection Number: 0404

**Departure**

\* Airport: AIY  
\* Country: US

**Destination**

\* Airport: JKT  
\* Country: ID

**Details**

Distance: 1.000,0000   
Flight time: 9:00  
Charter fit:  Scheduled

Figure 15: Switching from display to edit mode does not set default values from personalization

This example was only shown for the sake of completeness. It does not represent a big limitation because default values are more important during the creation of an entity, a process when all input fields are open for changes immediately.

### **By BAdI**

BAdI `USMD_RULE_SERVICE`, method `DERIVE_ENTITY` is not primarily made for default values, but it can be used to do so. It is called after filling in the key fields of the entity and triggering a roundtrip (e.g. by pressing ENTER). It is not possible to set the key fields of the entity. The filter values of this BAdI are entity type and model.

BAdI `USMD_UI_EVENT2`, which you might know from the previous UI for object maintenance (application `USMD_ENTITY_VALUE2`), is not called by the new UI because you have now the possibility to inherit from the generic feeder classes provided by SAP.

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