User Manual Advanced Topics: Dynamic Fields

Contents

Overview - Dynamic Fields

1. An InstantGMP feature that allows user-defined fields to be created in a master record MPR and used in Batch Production Record (BPR) Manufacturing Instructions. Dynamic Fields allows users to:
   a. Create custom entry fields and collect data.
   b. Display data or information. (display custom entry field data or system data)
   c. build and offer operators selection lists/drop-down boxes
   d. Display the results of high level calculations within and between manufacturing steps.

2. Only Project Managers and Quality Managers have access to this icon and the associated dynamic field functions.

3. Attribute Definition
   a. The complete description of all characteristics of a dynamic field.
   b. Can be used as an entry field on a step, displayed on a step, and used in formulas.
   c. Can be combined to make formulas using any combination of dynamic field attributes.
   d. Can be used in combination with attributes from the current step or any other step within the MPR to create formulas.

4. System Attribute
   a. Dynamic Field using specific data from the Cover Page or Manufacturing Instruction.
   b. Can be used in combination with attributes from the current step or any other step within the MPR to create formulas.

System Attribute on Manufacturing Step	Control Type
Fill Weight Required	Numeric (Check Box)
Step (Step Sequence	Numeric
Target	Numeric
Min	Numeric
Max	Numeric
Range	Character
Weight Record	Numeric

System Attributes on Cover Page	Control Type
Product Strength	Character
Theoretical Batch Yield	Numeric

Batch Size	Numeric
Batch Unit	Character
Primary Container	Character
Number of Containers	Numeric
Amount/Primary Container	Numeric

5. Dynamic Fields Use Synopsis Table

Dynamic field control	Control Type	In MPR	In BPR
Edit Box	Character, Date, Numeric, memo	Create custom field name	**Enter data** in custom field
Edit Box	Character, Date, Numeric, memo	Call to custom field name,	**Display** data from previous step
Edit box	(harmonize with system data type) *	Call to system attribute (fields that already exist, e.g. batch size)	**Display MPR system data**
Edit box	Numeric (also works with Character if only characters are entered in results)	Create formula by calling system attribute fields, custom fields and employing arithmetic functions	Enter data; system calculates data in accordance with **formula**
Edit box	Numeric	Create arithmetic formulas that call to results of other formulas in an MPR	Enter data; system calculates entered and called data in accordance with **formula**
Dynamic Combo Box	Numeric	Name selection list/drop-down; add each choice to drop-down	Select choice from **drop-down**

6. Attribute Characteristics

Name/icon	Meaning/Function
Up/down arrows	Reorders selected attributes in the direction of the selected arrow within a category
Category	Organization level used to name attributes creating a group
Code	Unique, user-defined identifier of a custom attribute
Control type	Identifies the data format to be created
Description	Label for custom defined Dynamic filed that is displayed on a BPR
Decimals	Number of numerals to right of decimal point (When the Decimals option is selected, the system sets six (6) numerals to the right of the decimal point. When the Decimals option is not selected, truncated integers will be displayed.)

7. Buttons

MPR Instructions   Master Production Record Master Production Record

Project Title 0001   MPR #   43   MPR Version   1   Part #   293   Version #   1   Product Name   CAPA- total improvement- 1 oz Amber Bottle- quality

Step   0.00   Mprstatus   In Progress

Attributes

		Code	Description	Data type	Length	Decimals	Category	Required	Control type	Formula

Page 1 of 1   1   50   Attribute   Select   ▼   INSERT A NEW RECORD

IGMP.HCmMPRMIOavAttributes   TEST DYNAMIC FIELDS   SHOW SYSTEM ATTRIBUTES   CREATE NEW RECORD   CONFIRM

CANCEL

INSERT A NEW RECORD The "insert a new record" button is used to insert a selected attribute from the Attribute drop-down list to an MPR step.

CREATE NEW RECORD "The Create New Record" button is used to create new attributes and/or formulas using custom attributes and system attributes.

TEST DYNAMIC FIELDS The "Test Dynamic Fields" button is used to test that Dynamic fields and any formulas to check to ensure formulas are calculating correctly.

SHOW SYSTEM ATTRIBUTES The "Show System Attributes" button shows the values for the system attributes for the current MPR manufacturing instruction.

CONFIRM The Confirm button on the dynamic fields screen confirms the dynamic field information.

8. Accessing Dynamic Fields.

    a. Dynamic Fields are access through the 📋 icon on the MPR Manufacturing Instruction screen.

Master Production Record

Project Title API Synthesis Example MPR # 15 MPR Version 2 Part # 290 Version # 1 Product Name API Master Template- Bulk - Re

				Step	Part #	Material	Version #	Action
✏	🗑	🔍	☰	9100.00	0		0	RECONCILIATION
✏	🗑	🔍	☰	9110.00	0		0	A. Enter weight of one unit in g. Confirm Theoretical Bulk Weight = Weight of one
✏	🗑	🔍	☰	9120.00	0		0	B. Enter weight of in-process test samples in kg and enter weight of QC test samp
✏	🗑	🔍	☰	9130.00	0		0	E. Confirm Unaccounted Loss = Theoretical Batch Yield - Total Weight Accounted
✏	🗑	🔍	☰	9140.00	0		0	Confirm Overall Yield (%) is within limits. If not contact QA.
✏	🗑	🔍	☰	9150.00	0		0	Confirm Product Yield (%) is within limits. If not contact QA.

Dynamic Fields Development Example

Note: This exercise will guide you through creating a common set of steps employing the dynamic fields to automate the process. This Master Record will be for encapsulation of a powder and highlight the theoretical yield, samples and loss and reconciling the % yield.

1. **Navigate to Master Production Record – Manufacturing Instructions**

2. **Create a new master record (or use an in-process record for which you can erase or modify existing steps)**

3. **Navigate to the Manufacturing instructions tab**

4. **Create a manufacturing instruction step "1.00" by selecting Add New record button**

   Note: make sure to number the step as fields from steps with 0.00 will not be available to call for formulations.

5. **Select the Dynamic Fields icon ☰ associated with an individual manufacturing step.**

MPR Step - Dynamic Field Definition

Project Title 00 NEW   MPR # 18   MPR Version 3   Part # 155   Version # 1   Product Name 00FG-55%-extra strength- 55- 00Primary Container- 555

Step   1.00   Mprstatus In Progress

Attributes

				Code	Description	Data type	Length	Decimals	Category	Required	Control type	Formula
✏	🗑	↑	↓	aaa	aaa	Numeric	20	0		☐	Edit Box	
✏	🗑	↑	↓	bbb	bbb	Numeric	20	0		☐	Edit Box	
✏	🗑	↑	↓	ccc	ccc	Numeric	20	0		☐	Edit Box	
✏	🗑	↑	↓	ddd	ddd	Numeric	20	0		☐	Edit Box	
✏	🗑	↑	↓	eee	eee	Numeric	20	0		☐	Edit Box	
✏	🗑	↑	↓	formula 1	formula 1	Numeric	20	0		☐	Edit Box	(([!Att:aaa!] + [!Att:bbb!]) /([!Att:ccc!]*[!Att:ddd!])) - [!Att:eee!]
✏	🗑	↑	↓	drop down1	drop down1	Character	20	0		☐	Dynamic Combo Box	

⏮ ◀ ▶ ⏭ ⟳

Page 1 of 1   1   📄   50   📋 **Attribute** Select ▾   **INSERT A NEW RECORD**

iGMP.HCmMPRMIOavAttributes   **TEST DYNAMIC FIELDS**   **SHOW SYSTEM ATTRIBUTES**   **CREATE NEW RECORD**

CANCEL

6. Select **CREATE NEW RECORD** button to create a dynamic field

BPR Instructions Attributes

Code [   ]

Description [   ]

Basic **Control** **Formula**

Type   [Character ▾]

Length   [20]

Category [   ]

Read Only ☐

7. Enter a unique "Code" e.g. "Samples" that will be universally understood by MPR writing team

8. Enter a description "Samples" That will show as the field label on the MPR and the BPR (focusing the cursor on the description field will copy the code into the description field)

9. Select Basic tab

10. Select "Numeric" from the "Type" drop-down box

11. Keep the default of "20" for the Length

12. Select the "Decimals" checkbox

13. Label the Category "reconciliation"

BPR Instructions Attributes

Code	samples
Description	samples

Basic | Large Description | Control | Formula | Advanced

Type   Numeric ▼

Length   20

Decimals ☑

Category   reconciliation

Read Only ☐

14. Select the Control Tab

BPR Instructions Attributes

Code	samples
Description	samples

Basic | **Control** | Formula

Type   Edit Box ▼

15. Select Edit box

16. Select CONFIRM

17. CONFIRM

18. (Repeat steps 6-17 for "rejects")

19. Select test dynamic fields button TEST DYNAMIC FIELDS

20. Enter "1" in the samples box and "1" in the rejects box

BPR Instructions Attributes

rejects 1	1.000000

reconciliation

Samples 1	1.000000

CONFIRM

21. **Dynamic fields testing data**

MPR Instructions

Project Title 0001 **MPR #** 43 **MPR Version** 1 **Part #** 293 **Version #** 1 **Product Name** CAPA- total improvement- 1 oz Amber Bottle- quality

Step 1.00 **Mprstatus** In Progress

Attributes

			Code	Description	Data type	Length	Decimals	Category	Required	Control type	Formula
✏ 🗑 ↑ ↓			samples	samples	Numeric	20	6	reconciliation	☐	Edit Box	
✏ 🗑 ↑ ↓			rejects	rejects	Numeric	20	0	reconciliation	☐	Edit Box	

CONFIRM

22. **step with sample and reject fields**

Master Production Record

Project Title 0001 **MPR #** 43 **MPR Version** 1 **Part #** 293 **Version #** 1 **Product Name** CAPA- total improvement- 1 oz Amber Bottle- quality

Cover Page	Materials	Equipment	In Process Tests	**Manufacturing Instructions**	MPR Approvals

	Step	Part #	Material	Version #	Action	Target	Min	Max	Range	Unit Name	Inventory
✏ 🔍 ⧉ 🗑	1.00	191	Purified Water	1		1.000000	0.990000	1.100000		mL	✓

ADD NEW RECORD

23. Create a new step "2.00"

24. Select unit

CONFIRM

25.

Dynamic Fields Formula Example

Note: The prior steps must be completed before starting this part of the exercise.

26. Select dynamic fields icon ⧉

27. Select "Create New Record" **CREATE NEW RECORD** button

28. Enter "Theoretical Batch Yield" in the "Code" and "Description" fields

29. Select "Numeric" in "Type" drop-down

30. Leave default of "20" for "Length"

31. Enter "reconciliation" as the "Category"

32. Select check box for "read only"

BPR Instructions Attributes

Code	Theoretical batch yield
Description	Theoretical batch yield

Basic | Large Description | Control | Formula | Advanced

Type	Numeric ▼
Length	20
Decimals	☑
Category	reconciliation
Read Only	☑

33. Select the Control tab

34. Select "Edit box" from Type drop-down

35. Select Formula tab

36. Select "Actual Step" from "Step" drop-down

Step	Actual Step ▼

37. Select "System" from "Attribute Type" drop-down

Attribute Type	System ▼

BPR Instructions Attributes

Code Theoretical batch yield

Description Theoretical batch yield

Basic **Control** **Formula**

Formula

Step Actual Step ▼

Attribute Type System ▼

System Attribute Cover - Amount/Primary Container ▼

Cover - Amount/Primary Container
Cover - Batch Size
Cover - Batch Unit
Cover - Number of Containers
Cover - Primary Container
Cover - Product Strength
Cover - Theoretical Batch Yield
Fill Weight Required
Max
Min

38. Select "Cover-Theoretical Batch yield" from the System Attribute drop-down

39. Select "Add to Formula" ADD TO FORMULA **button to populate formula with this attribute.**

BPR Instructions Attributes

Code Theoretical batch yield

Description Theoretical batch yield

Basic **Control** **Formula**

Formula [!Sys:MprTheoreticalBatchYield!]

Step 0.00 ▾

Attribute Type System ▾

System Attribute Cover - Theoretical Batch Yield ▾

ADD TO FORMULA

40. **CONFIRM** **Attribute**

41. **Select "Create New Record"** **CREATE NEW RECORD** **button**

42. **Enter "Actual Batch Yield" in the code and description fields**

43. **Select "Numeric" from the "Type" drop-down**

44. **Leave "20" as the Length**

45. **Select "Decimals" check box**

46. **Enter "reconciliation" as the Category**

BPR Instructions Attributes

Code	Actual batch Yield
Description	Actual batch Yield

Basic Control Formula

Type	Numeric ▼
Length	20
Decimals	☐
Category	reconciliation
Read Only	☐

47. **Select the Control tab**

48. **Select "Edit Box" from the "Type" drop-down**

BPR Instructions Attributes

Code	Actual batch Yield
Description	Actual batch Yield

Basic **Control** Formula

Type	Edit Box ▼

CONFIRM

49.

50. **Select "Create New Record"** CREATE NEW RECORD **button**

51. **Enter "Known Loss" in code field and description field**

52. **Select "Numeric" for type**

53. Leave "20" in length field

54. Enter "reconciliation" as a "Category" name

BPR Instructions Attributes

Code	known loss
Description	known loss

Basic **Control** **Formula**

Type   Numeric ▼

Length   20

Decimals ☐

Category   reconciliation

Read Only ☐

55. Select Formula tab

56. Select 1.00 for "Step" drop-down

57. Select "Attribute" from Attribute Type drop-down

58. Select "Rejects" from "Dynamic Attribute" drop-down

59. Select Add to Formula   ADD TO FORMULA

BPR Instructions Attributes

Code   loss

Description loss

Basic	Control	**Formula**

Formula   [!Att:rejects@Step=1.00!]

Step   1.00 ▼

Attribute Type   Attribute ▼

Dynamic Attribute   rejects ▼

ADD TO FORMULA

60. **Enter "+" sign in formula**

61. **Select "Samples" from "Dynamic Attribute" drop-down**

62. **Select "Add to Formula" button**

BPR Instructions Attributes

Code loss

Description loss

Basic	Control	**Formula**

Formula [!Att:rejects@Step=1.00!] + [!Att:samples@Step=1.00!]

Step 1.00 ▼

Attribute Type Attribute ▼

Dynamic Attribute samples ▼

ADD TO FORMULA

CONFIRM

63. **attributes**

MPR Instructions

Master Production Record

Project Title 0001 MPR # 43 MPR Version 1 Part # 293 Version # 1 Product Name CAPA- total improvement- 1 oz Amber Bottle- quality

Step 2.00 Mprstatus In Progress

Attributes

		Code	Description	Data type	Length	Decimals	Category	Required	Control type	Formula
✏ 🗑 ↑ ↓		Theoretical batch yield	Theoretical batch yield	Character	20	0		☐	Edit Box	[!Att:Theoretical batch yield!]
✏ 🗑 ↑ ↓		loss	loss	Numeric	20	0	reconciliation	☐	Edit Box	[!Att:rejects@Step=1.00!] + [!Att:samples@St
✏ 🗑 ↑ ↓		Actual batch Yield	Actual batch Yield	Numeric	20	0	reconciliation	☐	Edit Box	[!Att:Actual batch Yield!]

CONFIRM

64. **step**

65. **Select Dynamic fields icon for step**

66. **Select** **TEST DYNAMIC FIELDS**

BPR Instructions Attributes

reconciliation

theoretical batch yield 1	5.000000
Actual batch Yield 1	3.000000
known loss	2.000000

67. **Enter the theoretical yield as less than the theoretical yield (generally this is 10% less or slightly less than the theoretical yield minus rejects and samples)**

68. **Create a new step "3.00" for reconciliation formula**

69. **Select dynamic fields icon**

70. **Select "Create New record"** CREATE NEW RECORD **button**

71. **Enter "reconciliation formula" in the code and description**

72. **Select Basic tab**

73. **Select "Numeric" for type**

74. **Leave "20" in length field**

75. **Enter "reconciliation" as a "Category" name**

76. **Select Control tab**

77. **Select "Edit box" from drop-down**

78. **Select Step 2.00 for the step**

79. **Select "Attribute" for "Attribute Type"**

80. **Select "theoretical batch yield" from Dynamic Attribute drop-down**

81. **Select "Add to Formula" button**

82. **Add "-" minus sign to the formula**

83. **Add "(" parenthesis to the formula**

84. **Select "known loss" from "Dynamic Attribute" drop-down**

85. Select ![ADD TO FORMULA] **Add to formula button**

86. Select "Attribute" for "Attribute Type"

87. Select "Actual batch yield" from Dynamic Attribute drop-down

88. Select ![ADD TO FORMULA] **"Add to Formula" button**

89. Add right parenthesis ")" to the formula

BPR Instructions Attributes

Code Reconciliation Formula.

Description Reconciliation Formula.

| Basic | Control | **Formula** |

Formula [!Att:theoretical batch yield 1@Step=2.00!]-([!Att:known loss@Step=2.00!]+[!Att:Actual batch Yield 1@Step=2.00!])

Step Actual Step ▾

Attribute Type Attribute ▾

Dynamic Attribute Reconciliation Formula. ▾

ADD TO FORMULA

90. CONFIRM

91. Select test dynamic fields button TEST DYNAMIC FIELDS

BPR Instructions Attributes

reconciliation
Reconciliation Formula. -2.000000

CONFIRM

MPR Instructions

Project Title 0001 **MPR #** 38 **MPR Version** 2 **Part #** 293 **Version #** 1 **Product Name** CAPA- total improvement- 1 oz Amber Bottle-

Step 3.00 **Mprstatus** In Progress

Attributes

				Code	Description	Data type	Length	Decimals	Category	Required
✏️	🗑	↑	↓	Reconciliation Formula.	Reconciliation Formula.	Numeric	20	0	reconciliation	☐

CONFIRM

Master Production Record

Project Title 0001 **MPR #** 43 **MPR Version** 1 **Part #** 293 **Version #** 1 **Product Name** CAPA- total improvement- 1 oz Amber Bottle- quality

	Step	Part #	Material	Version #	Action	Target	Min	Max	Range	Unit Name	Inventory	Performer
✏️ 🔍 ≣ 🗑	1.00	191	Purified Water	1		1.000000	0.990000	1.100000		mL	✓	
✏️ 🔍 ≣ 🗑	2.00	0		0		0.000000	0.000000	0.000000		---		
✏️ 🔍 ≣ 🗑	3.00	0		0	reconciliation formula	0.000000	0.000000	0.000000		---		

Cover Page | Materials | Equipment | In Process Tests | **Manufacturing Instructions** | MPR Approvals

92. **Create a new step "4.00" by selecting** ADD NEW RECORD

93. **Number the step "4.00," unit of "---" and** CONFIRM

94. **Select the dynamic fields icon ≣ for Step 4**

95. **Select** CREATE NEW RECORD

96. *Enter "% Yield" in the Code and Description fields*

97. **Select "numeric" for Type drop-down on Basic tab**

BPR Instructions Attributes

Code % yield

Description % yield

Basic | **Control** | **Formula**

Type Numeric ▼

Length 20

Decimals ☐

Category

Read Only ☐

98. Select "edit box" on Formula tab

BPR Instructions Attributes

Code % yield

Description % yield

Basic | **Control** | **Formula**

Type Edit Box ▼

Make a formula on the Formula tab for % batch yield:
99. Select Step "2.00" from "Step" drop-down

100.   **Select "Attribute" from "Attribute Type" drop down**

101.   **Select "Actual Batch yield" from the 'Dynamic Attributes" drop down**

102.   **Select** **ADD TO FORMULA** **add to formula button**

BPR Instructions Attributes

Code %Yield

Description %Yield

| Basic | Control | **Formula** |

Formula [!Att:Actual batch Yield 1@Step=2.00!]

Step 2.00 ▼

Attribute Type Attribute ▼

Dynamic Attribute Actual batch Yield 1 ▼

ADD TO FORMULA

---

103. **Enter left parenthesis "(" to the left of the attribute in the formula**

Formula ([!Att:Actual batch Yield 1@Step=2.00!]

104. **Enter "/" after attribute:**

Formula ([!Att:Actual batch Yield 1@Step=2.00!]/

105. **Select "Actual step" from "Step" drop-down**

106. **Select "System" for "Attribute Type"**

107. **Select "theoretical batch yield" from the system attributes**

108. **Select** ADD TO FORMULA **"add to formula" button**

Formula ([!Att:Actual batch Yield 1@Step=2.00!]/[!Att:theoretical batch yield 1@Step=2.00!]

109. **Enter right parenthesis ")" to the right of the attribute in the formula**

110. **Enter "* 100" to the right of the parenthesis (to represent multiply by 100)**

Formula	([!Att:Actual batch Yield 1@Step=2.00!]/[!Att:theoretical batch yield 1@Step=2.00!]) * 100

111. CONFIRM **dynamic fields**

112. CONFIRM **step 5.00**

113. **Select Dynamic fields icon for step 5.00**

114. **Select** TEST DYNAMIC FIELDS

115. **Formula was calculated**

BPR Instructions Attributes

%Yield 60.000000

116. CONFIRM

117. CONFIRM **step**

118. **Select Add new record** ADD NEW RECORD **to create step 6.00**

119. CONFIRM

120. **Select** ⬕ **for step 6.00**

121. **Select** CREATE NEW RECORD

122. **Select "Character" for type**

123. **Leave "20" in the length box**

124. **Enter "controls" for Category**

125. **Select Control tab**

BPR Instructions Attributes

Code   proceed to packaging

Description   proceed to packaging

| **Basic** | **Control** | **Formula** |

Type   Character ▼

Length   20

Category   Controls

Read Only ☐

126.   **Select Control tab**

127.   **Select "Dynamic Combo Box" from "type" drop-down**

BPR Instructions Attributes

Code   proceed to packaging

Description   proceed to packaging

| **Basic** | **Control** | **Formula** |

Type   Edit Box ▼

Edit Box
Dynamic Combo Box

CONFIRM

OAV Attribute Information

General | **Values**

Code	proceed to packaging
Description	proceed to packaging
Data Type	Character
Category	Controls
Required	☐
Control Type	Dynamic Combo Box
Data Length	20
Data Decimals	0
HTbMPRMIOavAttributes01	

128.   **Select Values tab** **Values**

129.   **Select** **ADD NEW RECORD** **button to create options for the drop-down box**
          Note: code must be numeric for drop-down box selections, Description can be alpha-numeric

130.   **Enter 01 in the code**

131.   **Enter "yes" in the description**

OAV Attribute Values

Code	01
Description	yes

PXTools.OAV.TOAVAttributeValues   **CONFIRM** **CLOSE**

132.   **Select** **CONFIRM**

133.   **Select** **ADD NEW RECORD** **button to create options for the drop-down box**

134.   **Enter 02 in the code box**

135.   **Enter "no" in the description box**

OAV Attribute Values

Code   02

Description   no

PXTools.OAV.TOAVAttributeValues   CONFIRM   CLOSE

CONFIRM

OAV Attribute Information

General	Values

			Code	Description
✏ 🗑 🔍			01	yes
✏ 🗑 🔍			02	no

CLOSE

136.   **Select** CLOSE

137.   **Select** TEST DYNAMIC FIELDS

BPR Instructions Attributes

Controls

proceed to packaging   [▼]

yes
no

138.   **Select "yes" and** CONFIRM

139.   CONFIRM **step**

Master Production Record

Project Title 0001 **MPR #** 43 **MPR Version** 1 **Part #** 293 **Version #** 1 **Product Name** CAPA- total improvement- 1 oz Amber Bottle- quality

				Step	Part #	Material	Version #	Action
✏	🔍	⅀	🗑	1.00	191	Purified Water	1	
✏	🔍	⅀	🗑	2.00	0		0	
✏	🔍	⅀	🗑	3.00	0		0	reconciliation formula
✏	🔍	⅀	🗑	4.00	0		0	
✏	🔍	⅀	🗑	5.00	0		0	

MPR Instructions

Project Title 0001 **MPR #** 43 **MPR Version** 1 **Part #** 293 **Version #** 1 **Product Name** CAPA- total improvement- 1 oz Amber Bottle- quality

Step 5.00 **Mprstatus** In Progress

Attributes

				Code	Description	Data type	Length	Decimals	Category	Required	Control type	Formula
✏	🗑	↑	↓	proceed to packaging	proceed to packaging	Character	20	0	Controls	☐	Dynamic Combo Box	

140. **Go to "MPR Approvals"** [MPR Approvals] **tab**

141. **Approve MPR** [SIGN]
Note: Fields have been created and cannot be changed unless the MPR is versioned up, copied or scaled.

142. **Create Batch record**

143. **Issue batch**

144. **Navigate to the manufacturing instruction**

145. **Perform same functions in BPR with same results**