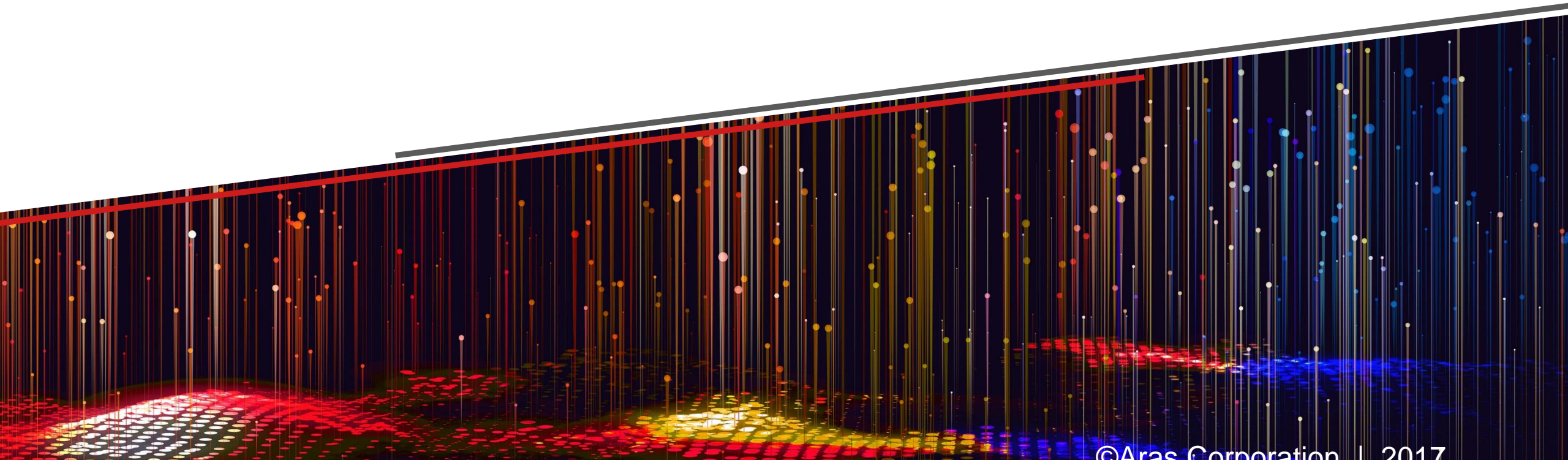




Property Extended Validation Rules

Author: Rolf Laudenbach



Description - Property extended Validation

- Purpose:
 - Add configurable rules to check availability or specific expected values of properties of an Item by life cycle state at run time.
- The checks according to rules run while an item is in a defined „stage“ or gets promoted to a “stage”.
- This allows to extend the options of checking for „required“ data beyond just during the initial „save“ action.
- „Stages“ are defined as one or more possible „Life Cycle States“ of an item.
- A generic „Server Method“ ([pev_ItemProperty_extValidations](#)) is provided to read the rules of the ItemType specific configurations and execute the checks and generate an error message listing missing or non-conforming property values.
- This method must be connected to the „onAfterUpdate“ events of ItemTypes to enable its extended property validations.
 - Note: on error of server methods „onAfterXX“ a roll-back takes place anyways !!!
- To enable checking during a promotion to one of the defined stages, the same method must also be connected to ItemType server events „onBeforePromote“ and „onAfterPromote“
 - Note: The OnBeforePromote and OnAfterPromote events can be used to define a standard promote operation for an item regardless of the lifecycle transition selected by the user. Both events are triggered BEFORE the standard lifecycle pre/post events are invoked.
- Also, an „Item Action“ ([pev_ItemProperty_extValidations](#)) is provided to execute the validations upon user request to get a report of missing or non-conforming property values.
- Error messages are template based and support multi-language configurations
- Property Validation rules must be set to status „Active“ (life cycle) to take effect.

(1) Define Stages for an ItemType

The screenshot shows the Aras Innovator Admin console. The left sidebar contains a tree view with the following structure:

- Administration
 - Access Control
 - Configuration
 - Calendars
 - Client Presentation
 - Dashboards
 - Database Upgrades
 - ItemType Stages Definitions** (highlighted with a yellow arrow)
 - PackageDefinitions
 - Property Validation Rules
 - Query Definitions
 - Tree Grid Views

The main area displays the 'ItemType Stages' properties for the 'Part' item type. The properties include:

- Created By: Innovator Admin
- Created On: 9/13/2018
- Modified By: Innovator Admin
- Modified On: 9/13/2018
- Locked By: Innovator Admin
- Major Rev: A
- Generation: 1
- State:

The 'Item Type Stages' table shows the following stages:

Applies to ItemT...	Item Type Label	Owner [...]	Description
ECR	ECR		
Part	Part		

The screenshot shows the 'Stages Definitions' table in the Aras Innovator Admin console. The table has the following columns:

- Stage Pos
- Swim Lane
- Stage Name
- Previous Stages
- Stage Label
- item_life_cycle...
- LC States (mapped)
- Progress Image [...]

The table contains the following data:

Stage Pos	Swim Lane	Stage Name	Previous Stages	Stage Label	item_life_cycle...	LC States (mapped)	Progress Image [...]
1	1	New		New	ECR	New	
2	1	Submitted		Submitted	ECR	Submitted	
2	1	In Review		In Review	ECR	2 item(s) selected	

A red arrow points to the 'In Review' stage. A red box highlights the 'Multi-Language Name of Stage' dropdown menu, which shows the following options:

- ☐ Cancelled
- ☐ Disapproved
- ☒ In CRB
- ☒ In Review
- ☐ New
- ☐ Released
- ☐ Submitted

(2) Define Property Validation Rules

ItemStages: ECR

File Edit View Search Actions Reports Tools Help

Contents

Administration

Access Control

Configuration

Calendars

Client Presentation

Dashboards

Database Upgrades

ItemType Stages Definitions

PackageDefinitions

Property Validation Rules

Query Definitions

Properties

Property Validation Rules

Created By: Innovator Admin

Created On: 9/13/2018

Modified By: Innovator Admin

Modified On: 9/13/2018

Locked By:

Major Rev: A

Generation: 1

State: In Work

Applies to ItemT...	Item Type Label	Status	item_type_stages_id [...]	Description
ECR	ECR	In Work	ItemStages: ECR	
Part	Part	In Work	ItemStages: Part	

Validations: ECR

Validations: Part

File Edit Views Search Actions Reports Tools Help

Property Validation Rules

Status: In Work

Owner: Administrators

Description:

Item Type Stages Def: ItemStages: ECR

Item Type Label: ECR

Custom Validation Method (optional):

Error Message Header: Data Completeness check for '{itemTypeLabel}' '{itemKeyedName}' in status '{itemStateLabel}':

Default Error Message: The value of Property '{propLabel}' is missing or incorrect ! (Value: '{propValue}', expected Values: '{propExpectedValues}')

Success Message: All completeness checks for state '{itemStateLabel}' have passed.

Property Validations

Actions

No Related

Hide Search Criteria

Seque...	Property on Relationship	Property On Tab (label)	Item Type Stages (to validate) ▲	Also check promotion to Stages	Item Property (to valida...	Property Label	Data Type	Pattern	Expected Property Values	De
1		Main Form	Submitted	<input type="checkbox"/>	priority	Priority	List		not null	
2		Main Form	Submitted	<input checked="" type="checkbox"/>	source	Source	List		not null	

PROMOTE to „Active“

If not set to „Active“, validations will not run !!!

Link to ItemType Stage Definitions

Supported Message Template Variables:
{propLabel}
{propValue}
{itemKeyedName}
{itemTypeLabel}
{itemStateLabel}

Common Message Templates (Multi-Language)

Stage to apply validations to Selected from ItemType Stage Definition

Message Templates per Property Check. If set, it will override common Message Template

Label added to Error Message

Optional: RelationshipType holding properties to check

Enable validations If promoted to this Stage

Property to do validations for

Expected Values to check: Semi-colon separated !!!

Aras

Newer Layout (same Functionality)

Validations: ECR

File Edit Views Search Actions Reports Tools Help

Property Validation Rules

Status

In Work

Owner

Administrators

Description

Error Message Header

Data Completeness check for '{itemTypeLabel} {{itemKeyedName}}' in status '{itemStateLabel}':

Default Error Message

The value of Property '{propLabel}' is missing or incorrect ! (Value:'{propValue}', expected Values:'{propExpectedValues}')

Success Message

All completeness checks for state '{itemStateLabel}' have passed.

Applies to ItemType

ECR

Item Type Label

ECR

ItemType Classification

Item Type Stages Def

ItemStages: ECR

Custom Validation Method (optional)

You Can Use Message Parameters:

{itemTypeLabel}

{itemKeyedName}

{itemStateLabel}

{propLabel}

{propValue}

{propExpectedValues}

Property Validations

Actions No Related

Hide Search Criteria

Seque...	Property on Relationship	Property On Tab (label)	Item Property (to validate...	Property Label	Data Type	Pattern	Item Type Stages (to validate) ▲	Also check promotion to Stages	Expected Property Values	Depends
1		Main Form	priority	Priority	List		Submitted	<input type="checkbox"/>	not null	
2		Main Form	source	Source	List		Submitted	<input checked="" type="checkbox"/>	not null	

(3) Configurations on ItemTypes

ECR

File Edit Views Search Actions Reports Tools Help

ItemType

Name: ECR

Singular Label: ECR

Plural Label: ECRs

Small Icon: [Select an image...](#)

Large ICON: [Select an image...](#)

History Template: Default

Default Structure View: Tabs On

Versioning: Versionable ☐ Discipline: Automatic Revisions: Default

Search: Auto Search ☐ Default Page Size: 25 Max Records:

Implementation Type: ☒ Single Item ☐ Poly Item ☐ Federated Item

Secure Social Enabled

☐ Unlock On Logout

☐ Dependent

☐ Is Relationship

☒ Enforce Discovery

☐ Use Src Access

☒ Allow Private Permissions

Class Structure

Show Parameters Tab

When Populated

Properties RelationshipTypes Views **Server Events** Actions Life Cycles Workflows TOC Access TOC View Client Events xItemTypeAllowedProperty Can Add Permission

Actions Pick Related

Name	Method Type	Ver	execution_allo...	Comments	Event	Sort Order	Event Version
pev_ItemProperty_extValidations	CSharp	3	World	onAfterUpdate. extended ...	onAfterPromote	384	Version 1
pev_ItemProperty_extValidations	CSharp	3	World	onAfterUpdate. extended ...	onAfterUpdate	128	Version 1
pev_ItemProperty_extValidations	CSharp	3	World	onAfterUpdate. extended ...	onBeforePromote	256	Version 1

Properties RelationshipTypes Views Server Events **Actions** Life Cycles Workflows TOC Access TOC View Client Events xItemTypeAllowedProperty Can Add Permissions Reports

Actions Pick Related

Name	Type	Location	Method [...]	Target	Body [...]	Can Execute [...]	Sort Ord...
VC_AddItemsToBookmarks	Item	Client	VC_GetSelectedItems	None		SSVCActionCanE...	128
Change Discussion Definition	Item	Client	VC_ChangeDiscussio...	None		SSVCActionCanE...	256
pev_ItemProperty_extValidations	Item	Client	pev_ItemProperty_e...	None			384

Test it: Create new ECR (promote via InBasket)

ECR-100001

File Edit Views Search Actions Reports Tools Help

ECR

ECR Number: ECR-100001 Title: Test pev Status: New

Administrative Hierarchy Physical Hierarchy Corrective Action Product Improvement

Requested By: Source:

Created By: Innovator Admin Created On: 5/9/2019 Modified By: Innovator Admin Modified On: 5/9/2019 Locked By: Innovator Admin

Proposed Solution

Fast Track Priority For Tech Review Assigned Creator

Tech Review & Recommendation

Problem Status Solution

Nonrecurring Cost Estimate Less Than \$200

Key Implementation Timing Factors

Affected Items PRs Files

Actions Create Related

Type Action Old New Old Revisi... Interchangea... New Number [... New Revisi... In Build In Service

Workflow Activity Completion

Workflow: ECR-100001 Activity: Submit ECR

Tasks

Error

Data Completeness check for 'ECR (ECR-100001)' in status 'Submitted':

[Main Form] : The value of Property 'Source' is missing or incorrect ! (Value:"", expected Values:'not null')

Vote

Comments:

Authentication

Password: E-Signature:

Complete Save Changes Cancel

Properties

InBasket

Created By: Innovator Admin Created On: 5/9/2019 Modified By: Innovator Admin Modified On: 5/9/2019

Type	Source Item	Activity	Start Date [...]	Due Date [...]	Status	Assigned To [...]	Instructions	Work Item	My Assignment
Workflow Task	ECO-00001001	Submit ECO	5/9/2019	5/9/2019	Active	Innovator Admin	Please fill out and submit the ECO	ECO-00001001	1
Workflow Task	ECR-100001	Submit ECR	5/9/2019	5/9/2019	Active	Innovator Admin	Submit the ECR for review	ECR-100001	1

Preview: Properties

Edit ECR and set missing Property value

ECR-100001

File Edit Views Search Actions Reports Tools Help

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ECR

?

Created By: Innovator Admin
Created On: 5/9/2019
Modified By: Innovator Admin
Modified On: 5/9/2019
Locked By:

ECR Number

ECR-100001

Title

Test pev

Status

New

Administrative Hierarchy

Corrective Action

Physical Hierarchy

Product Improvement

Requested By

Source

Internal

Proposed Solution

Fast Track

Priority For Tech Review

Assigned Creator

No validation errors now.

Workflow Activity Completion

Workflow: ECR-100001
Activity: Submit ECR

Tasks

Sequence	Required	Description	Complete
1	<input type="checkbox"/>	Attach known Affected Items	<input type="checkbox"/>
2	<input type="checkbox"/>	Ensure the ECR is ready for initial review	<input type="checkbox"/>

Vote

Vote:

Submit

Delegate

Delegate to:

Comments:

Authentication

Password:

E-Signature:

Complete

Save Changes

Cancel

Try promote via InBasket again

Properties

InBasket

Created By: Innovator Admin
Created On: 5/9/2019
Modified By: Innovator Admin
Modified On: 5/9/2019

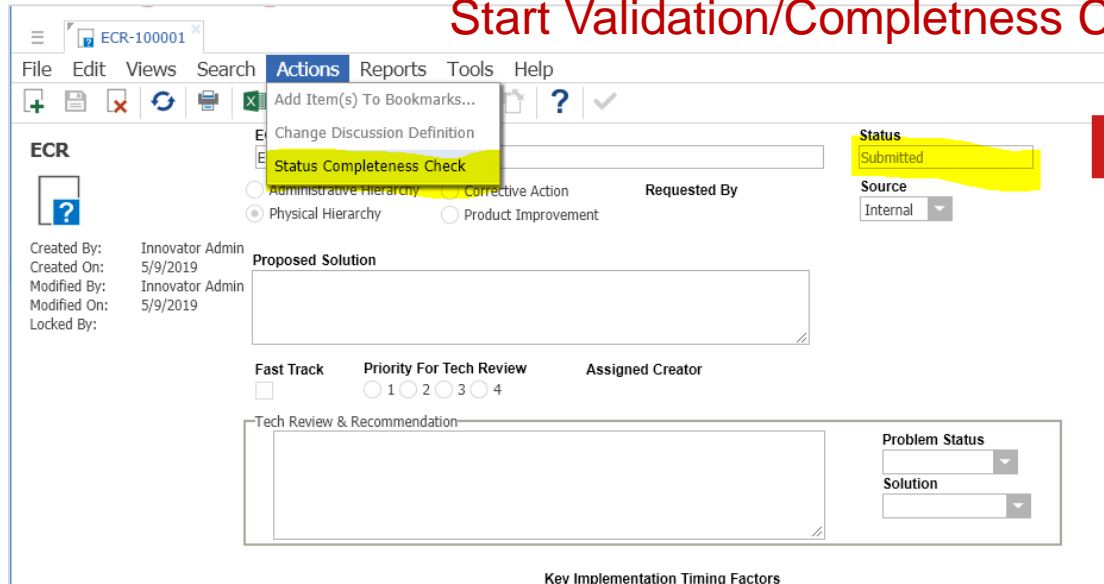
Type	Source Item	Activity	Start Date [...]	Due Date [...]	Status	Assigned To [...]	Instructions	Work Item	My Assignment
Workflow Task	ECO-00001001	Submit ECO	5/9/2019	5/9/2019	Active	Innovator Admin	Please fill out and submit the ECO	ECO-00001001	<input checked="" type="checkbox"/>
Workflow Task	ECR-100001	Submit ECR	5/9/2019	5/9/2019	Active	Innovator Admin	Submit the ECR for review	ECR-100001	<input checked="" type="checkbox"/>

Preview: Properties

8 | © 2018 Aras

Open ECR (in status „Submitted“)

Start Validation/Completeness Check via Action



ECR-100001

File Edit Views Search Actions Reports Tools Help

ECR

Created By: Innovator Admin
Created On: 5/9/2019
Modified By: Innovator Admin
Modified On: 5/9/2019
Locked By:

Change Discussion Definition

Status: Submitted

Source: Internal

Administrative Hierarchy
Physical Hierarchy

Corrective Action
Product Improvement

Requested By

Proposed Solution

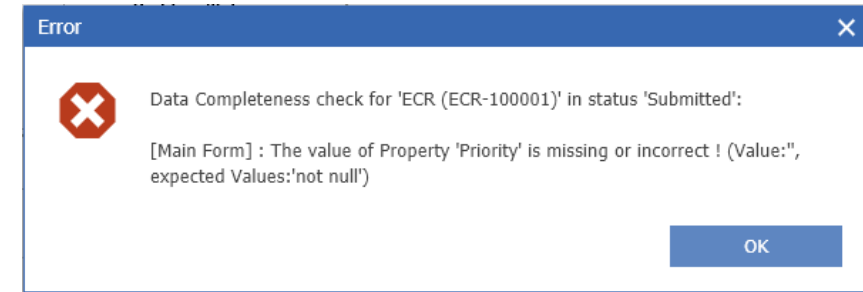
Fast Track
Priority For Tech Review: 1 2 3 4

Assigned Creator

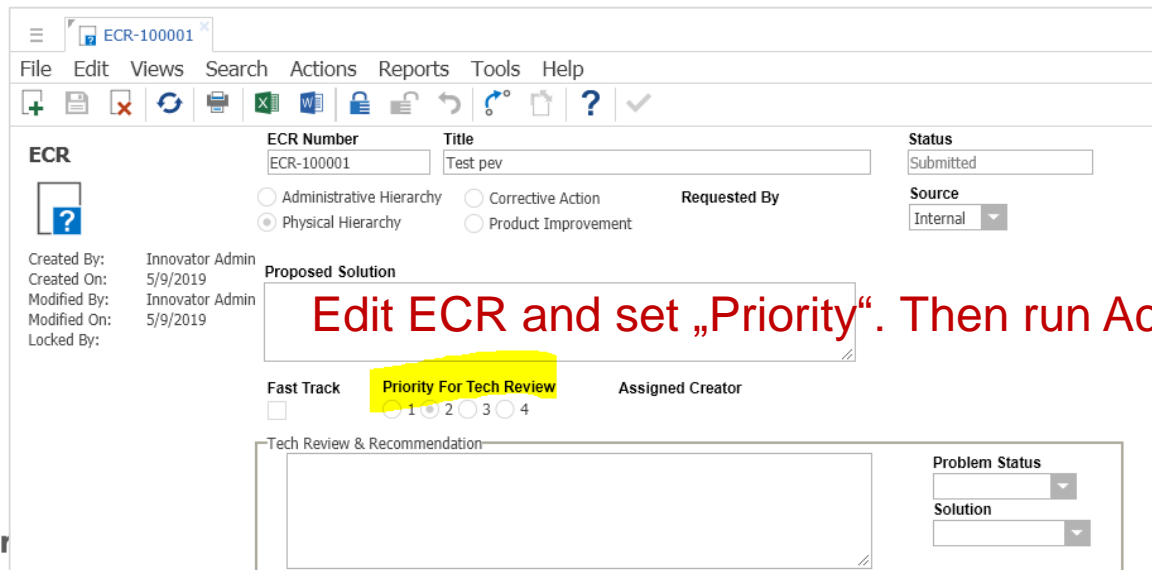
Tech Review & Recommendation

Problem Status
Solution

Key Implementation Timing Factors



Still a property value is missing !!



ECR-100001

File Edit Views Search Actions Reports Tools Help

ECR

Created By: Innovator Admin
Created On: 5/9/2019
Modified By: Innovator Admin
Modified On: 5/9/2019
Locked By:

ECR Number: ECR-100001
Title: Test pev
Status: Submitted

Administrative Hierarchy
Physical Hierarchy

Corrective Action
Product Improvement

Requested By

Proposed Solution

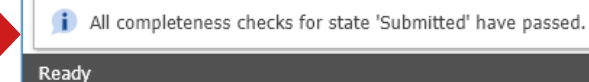
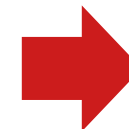
Fast Track
Priority For Tech Review: 1 2 3 4

Assigned Creator

Tech Review & Recommendation

Problem Status
Solution

Edit ECR and set „Priority“. Then run Action again



Item Validations In Action

Check via Action (or when saving an update)

File Edit View Search **Actions** Reports Tools Help

Hide Configurable InBasket

Enterprise Search: Reindex All

Choose CM Options

Reset preferences

Update timezones data

Visual Collaboration Notifications

Add Item(s) To Bookmarks...

Change Discussion Definition

Status Completeness Check

Innovator Admin 9/13/2018

Innovator Admin 9/13/2018

Modified On: 9/13/2018

ECR Number	Title	Status	Fast Track	Priority
ECR-100001	Test111	Submitted	<input type="checkbox"/>	
ECR-100002	TEST 2	New	<input type="checkbox"/>	

Error messages shown in a popup window

Error

Data Completeness check for 'ECR (ECR-100001)' in status 'Submitted' has failed:

[Main] : The value of Property 'Priority' is missing or incorrect ! (Value --> ", expected Values: 'not null')

[Main] : The value of Property 'Source' is missing or incorrect ! (Value --> ", expected Values: 'not null')

OK

File Edit View Search **Actions** Reports Tools Help

Hide Configurable InBasket

Enterprise Search: Reindex All

Choose CM Options

Reset preferences

Update timezones data

Visual Collaboration Notifications

Add Item(s) To Bookmarks...

Change Discussion Definition

Status Completeness Check

Innovator Admin 9/13/2018

Innovator Admin 9/13/2018

Modified On: 9/13/2018

ECR Number	Title	Status	Fast Track
ECR-100001	Test111	Submitted	<input type="checkbox"/>
ECR-100002	TEST 2	New	<input type="checkbox"/>

All completeness checks for state 'New' have passed.

Ready arastraining

Success message at bottom of Main Page

Check when promoting

Created By: Innovator Admin

Created On: 9/13/2018

Modified By: Innovator Admin

Modified On: 9/13/2018

Locked By: A

Major Rev: 1

Generation: New

State: New

Promote ECR-100002

To State

Submitted

Ready

ECR Number	Title	Status	Fast Track	Priority	Change Type	Requested By [...]	Source	Release Dat
ECR-100001	Test111	Submitted	<input type="checkbox"/>					
ECR-100002	TEST 2	New	<input type="checkbox"/>					

Error messages shown in a popup window

Error

Data Completeness check for 'ECR (ECR-100002)' in status 'Submitted' has failed:

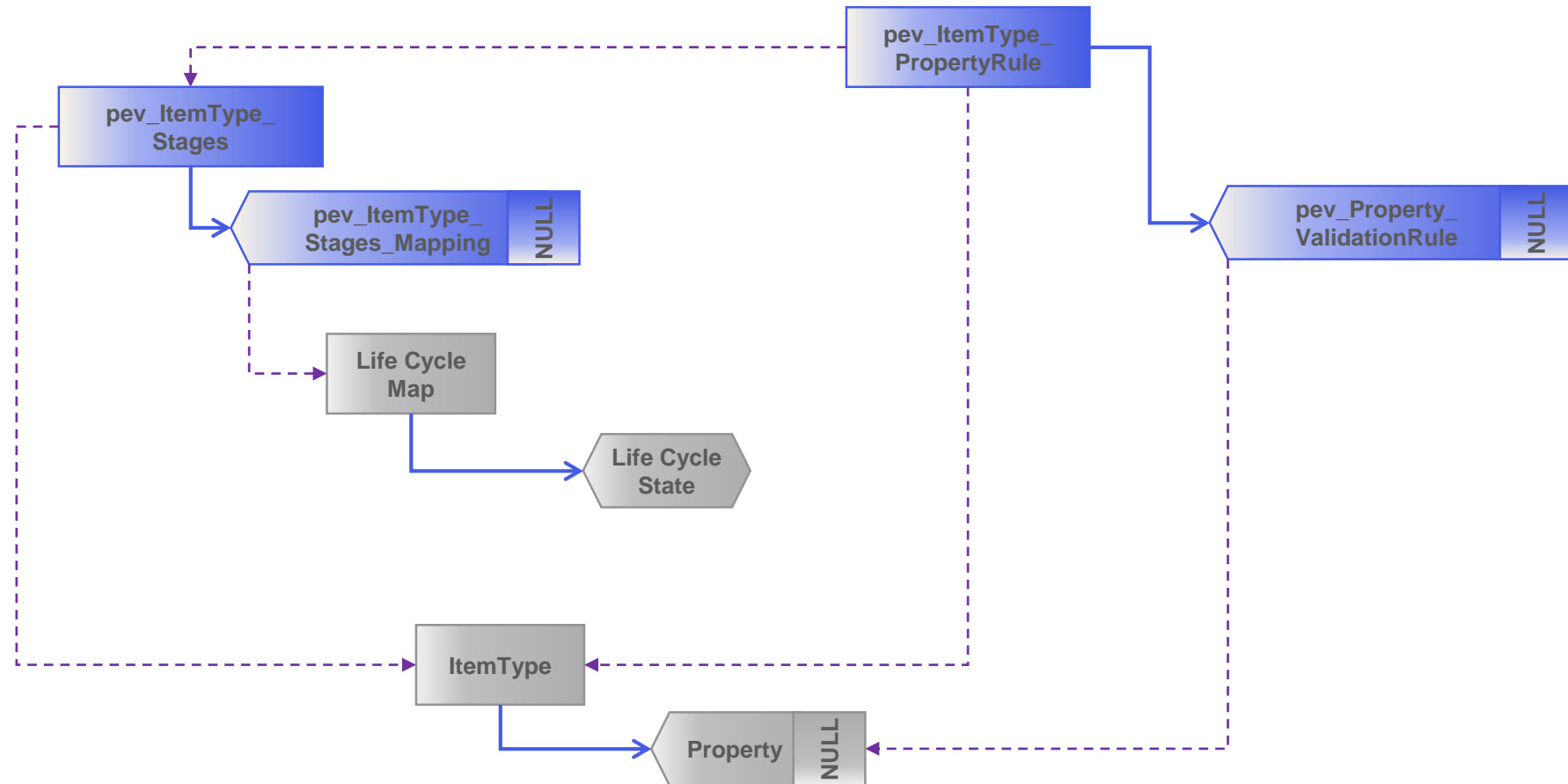
[Main] : The value of Property 'Source' is missing or incorrect ! (Value --> ", expected Values: 'not null')

Show Details OK

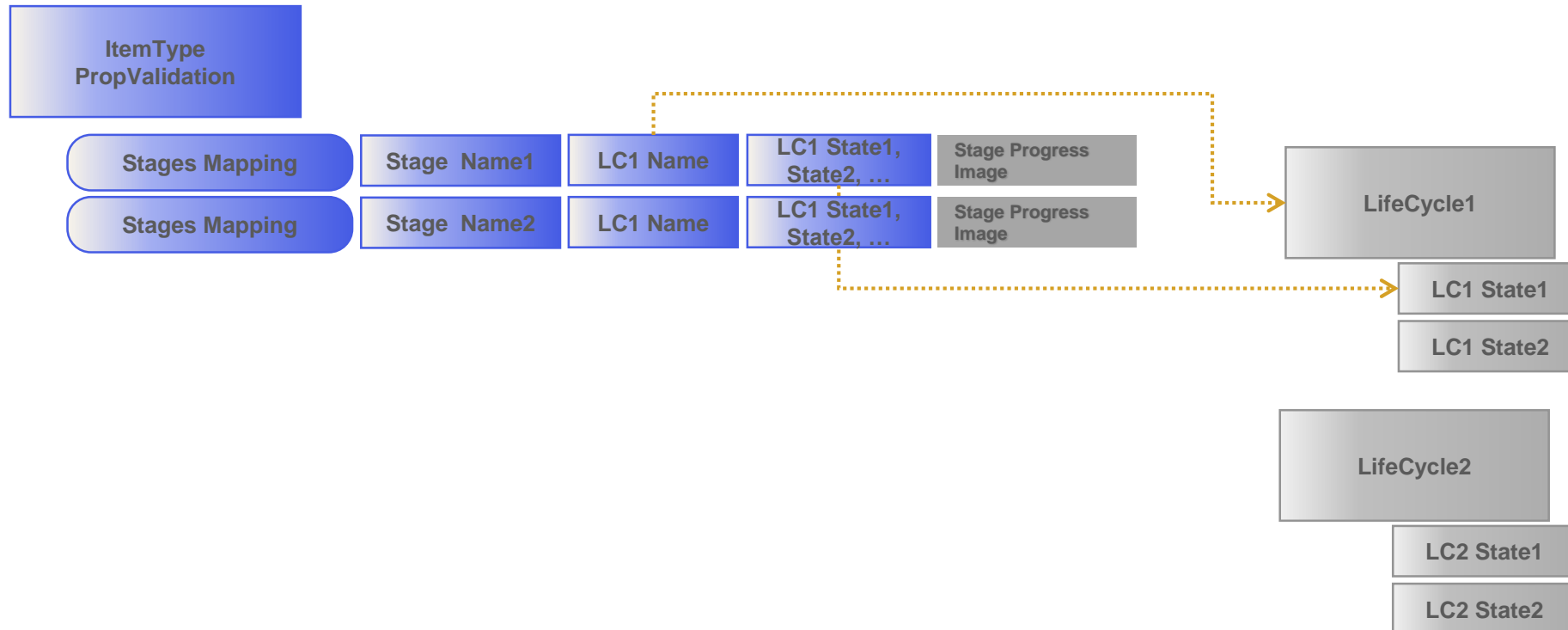
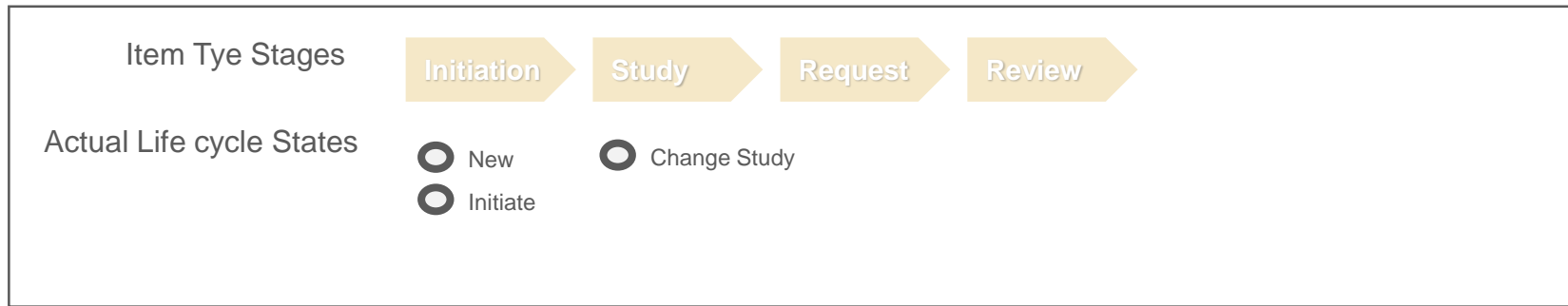
Our configuration has only one validation active for promoting the item

Conceptual Overview

Data Model



Concept: ItemType Stages



Concept Overview: Item Property Validation Rules

(does not cover xProperties, yet)

