

# Add-On Solution Package

## „Workflow Utilites 3-0 - Concepts “

A mix of various features (primarily methods) to help automate workflows. Importing the package does not necessarily activate these features. Please read the documentation to learn how to best make use of them.

- Resolve Placeholder Identities on WF Activities (onAssign). This may be the most powerful feature in this package. It consists of:
  - a method: "WF ResolvePlaceholderOnActivity" to be added to Activity Server Events.
  - And a new property on Identities "place\_holder\_resolution\_rule"
- Adds a toolbar button on Workflow History Form to open the view of the Workflow Process directly from the “SignOffs” tab
- Logic to change WF Activities’ permissions to allow “adhoc” Workflow Assignments. (no longer required for Aras Innovator 11SP5 and higher)
  - Can be triggered from Life Cycle transitions or when Workflow Activities get activated.
  - An example is added to the Express DCO’s life cycle.
- Logic to set activities to “automated” , if no assignments are configured.
  - This way you can set up many sequential activities with no assignments and use “ad-hoc” assignment
  - on the ones you want to activate after the workflow process was started.
- Logic to „clone“ an activity when you loop to it again so you can still add different „ad-hoc“ assignments.
  - The „Team Review Express DCO“ workflow (sample) has an example how to use this logic.
- Adds a “single Review Express DCO Workflow” that can be used instead of the standard workflow.
- Adds a “Team Review Express DCO Workflow” that can be used instead of the standard workflow.
- Sample code to show how to save data from Workflow Activities to the (affected) item connected to the workflow process.
- A separate package with a custom(sample) Workflow using WF Utilites to show how to programmatically instantiate a workflow and how to use an approver matrix (do not use in production !)

# Installation

- Use the Aras Packaging Utilities Import Tool to import the package „[Workflow Utitlites - Concepts –vN-n](#)“ in multiple steps.
- There are optional installation steps.
- See Readme.txt for more Details

# View Workflow from SignOff Tab

Aras Innovator - Google Chrome

localhost/Aras11SP9/Client/X-salt=std\_11.0.0.6549-X/scripts/Innovator.aspx

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WF002 DCO-00001001

File Edit Views Search Actions Reports Tools Help

DCO

Number  
DCO-00001001

Title  
Initial Release

Change Reason

Change Coordinator  
Innovator Admin

Team  
Product Team

Change Description

Release Date  
3/3/2017

Priority  
1 - High  
2 - Normal  
3 - Low

Affected Items Attachments SignOffs

Workflow History Report

Item: DCO-00001001  
Started By: Innovator Admin

DCO Workflow w. Team Approvals  
Started On: 3/3/2017 12:05:33 PM

Current Status is: Closed  
Completed On: 3/3/2017 12:43:31 PM

Activity	State	Assigned To	Completed By	How Voted	When	Comments
Planning	Closed	Innovator Admin	Innovator Admin	Submit to Authors	3/3/2017 12:34:49 PM	
Draft Changes	Closed	Innovator Admin	Innovator Admin	Approve	3/3/2017 12:35:34 PM	
Team Review	Closed	Innovator Admin	Innovator Admin	Approve	3/3/2017 12:43:28 PM	

New toolbar Icon to open the Workflow Process

Aras Innovator - Google Chrome

localhost/Aras11SP9/Client/X-salt=std\_11.0.0.6549-X/scripts/Innovator.aspx

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D2000 B32CD9CFFC1481E... DCO-00001002

File Edit Views Search Actions Reports Tools Help

Workflow Process

Name  
DCO-00001002

Description  
DCO Workflow w. Team Approvals

Started By  
Innovator Admin

Current Status  
Active

Active Date  
3/3/2017

Label  
Express DCO

Process Owner  
Creator

View Signoffs

Cancel Workflow

Start

Begin

Planning

Submit to Authors

Draft Changes

Approve

Team Review

Approve

Final Review

Approve

Close Change

Reject

Rework

Cancel

Cancel Change

Fast Approve

Activity Summary

Name  
Draft Changes

Managed By  
Owner

Role

Status  
Pending

Escalate To

Duration

Message  
Update affected documents

Assignments

Name[...]

Required

For All

Voting Weight

Escalate To

# Set Permissions to allow adhoc Assignments on Workflow Process

## New Method: „CopyChangeOwnerToWorkflow“

The Owner (i.e. Change Coordinator) of the workflow controlled item will be set to be the owner of all workflow activities. The Logic can be triggered (added) on Workflow controlled item or workflow path/activity.

Note:

For Aras innovator 11 SP5 and higher  
This is no longer required.

Permissions to add Adhoc Assignment  
are now handled by the Core !

The screenshot displays two overlapping windows from the Aras Innovator application. The left window, titled 'ECO - ECO-00001007 (read only) - Windows Internet Explorer', shows the 'ECO' form. The 'Change Reason' field is set to 'aaa'. The 'Change Coordinator' is 'Innovator Admin' and the 'Team' is 'Product Team'. The 'Priority' is set to '2 - Normal'. The 'Impact Matrix' and 'Attachments' sections are visible. The 'Workflow History Report' at the bottom shows a list of activities: Submit ECO, Planning, Plan Review, and Plan Review 2. The right window, titled 'Workflow Process - ECO-00001007 - Windows Internet Explorer', shows the 'Workflow Process' configuration. The 'Name' is 'ECO-00001007', 'Active Date' is '10/12/2011', and 'Label' is 'ECO'. The 'Process Owner' is 'Innovator Admin'. The 'Activity Summary' section shows a table with columns: Name, Managed By, Role, Status, Excluded To, and Duration. The 'Assignments' section shows a table with columns: Name, Required, For All, Using Weight, and Excluded To. The 'Workflow Diagram' at the bottom shows a flowchart with activities: Start, Submit ECO, Cancel Change, Plan Review, Approve Plan, Draft Changes, Approve Changes, Change Review, and Close Change. Red dashed arrows indicate the flow of data and the relationship between the 'Change Coordinator' in the ECO form and the 'Managed By' field in the Workflow Process configuration.

Activity	State	Assigned To	Completed By	How Voted
Submit ECO	Closed	Innovator Admin	Innovator Admin	Submit to Planning
Planning	Closed	Innovator Admin	Innovator Admin	Submit to Plan Review
Plan Review	Closed	Innovator Admin	Innovator Admin	Approve Plan
Plan Review 2	Active	Innovator Admin		<a href="#">VOTE NOW!</a>

Name	Managed By	Role	Status	Excluded To	Duration
Draft Changes	Innovator Admin		Pending		

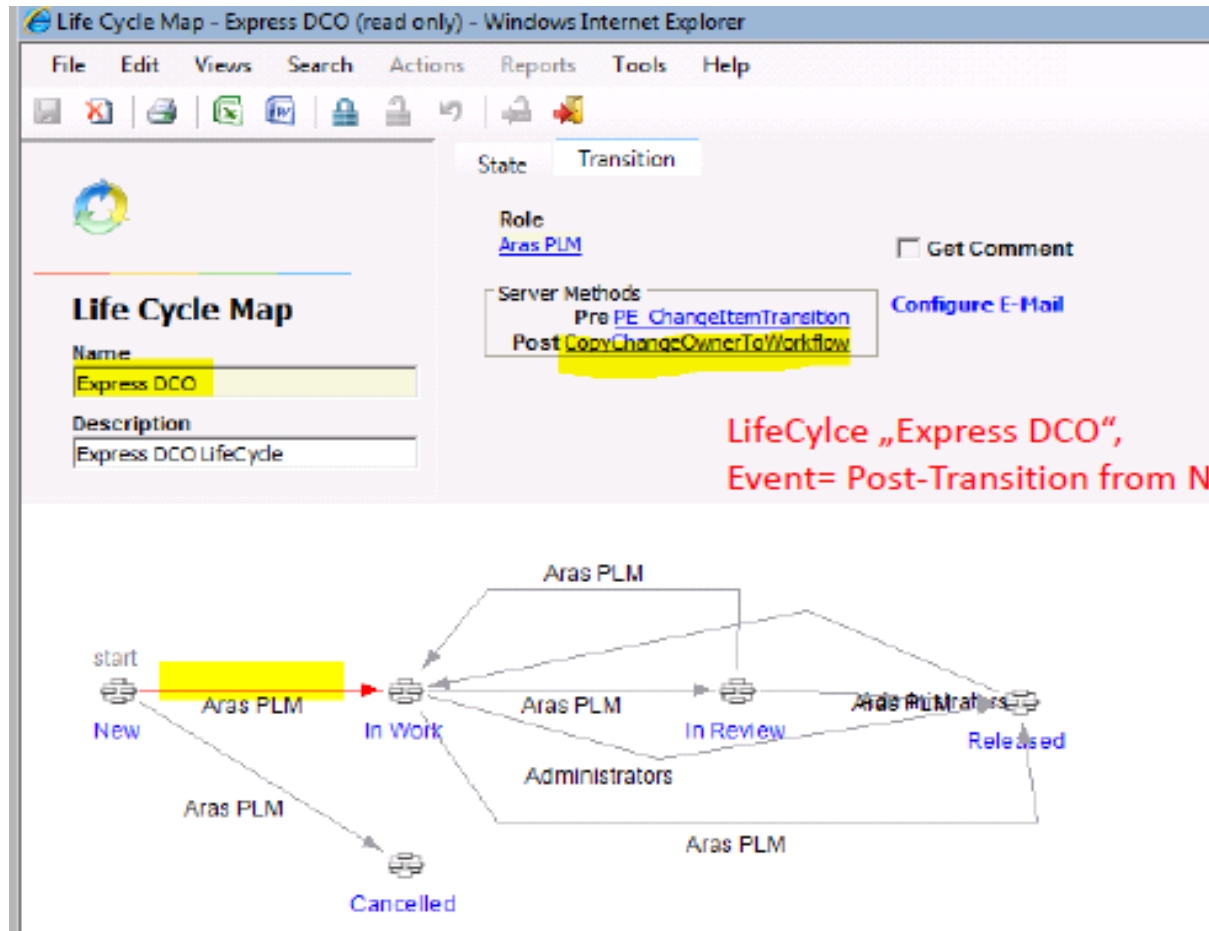
Name	Required	For All	Using Weight	Excluded To
Owner	<input type="checkbox"/>	<input type="checkbox"/>	100	

# Example to trigger logic for Adhoc Workflow Assignments

Note:

For Aras innovator 11 SP5 and higher  
This is no longer required.

Permissions to add Adhoc Assignment  
are now handled by the Core !



# Single Review Workflow „Single Review Express DCO“

You can use this workflow instead of standard „Express DCO“ on Documents

In conjunction with adhoc workflow assignments the change coordinator can add an remove reviewers to/from the single Review Activity

Aras Innovator - Google Chrome

localhost/Aras11SP9/Client/X-salt=std\_11.0.0.6549-X/scripts/Innovator.aspx

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Single Review Express...

File

Edit

Views

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Tools

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Save

Print

Excel

Word

Lock

Unlock

Undo

Redo

Start

Start Work

Review Drafted Changes

Approve

Close Change

Activity Template

Name

Review Drafted Changes

Label

Review Drafted Changes

Start Activity

☐

End Activity

☐

Automatic Activity

☐

Can Refuse

☒

Can Delegate

☒

Consolidate Delegated

☐

Wait For All Inputs

☐

Wait For All Votes

☐

Message

Update affected documents

Expected Duration

Reminder Interval

Timeout Duration

Reminder Count

Managed By

Owner

Escalate To

Role

Subflow

Assignments

Paths

Notifications

Tasks

Variables

Server Events

Promotions

Actions

Pick Related

+

✕

Excel

Word

Lock

Unlock

Undo

Redo

Hide Search Criteria

Filter

Sort

Print

Full Screen

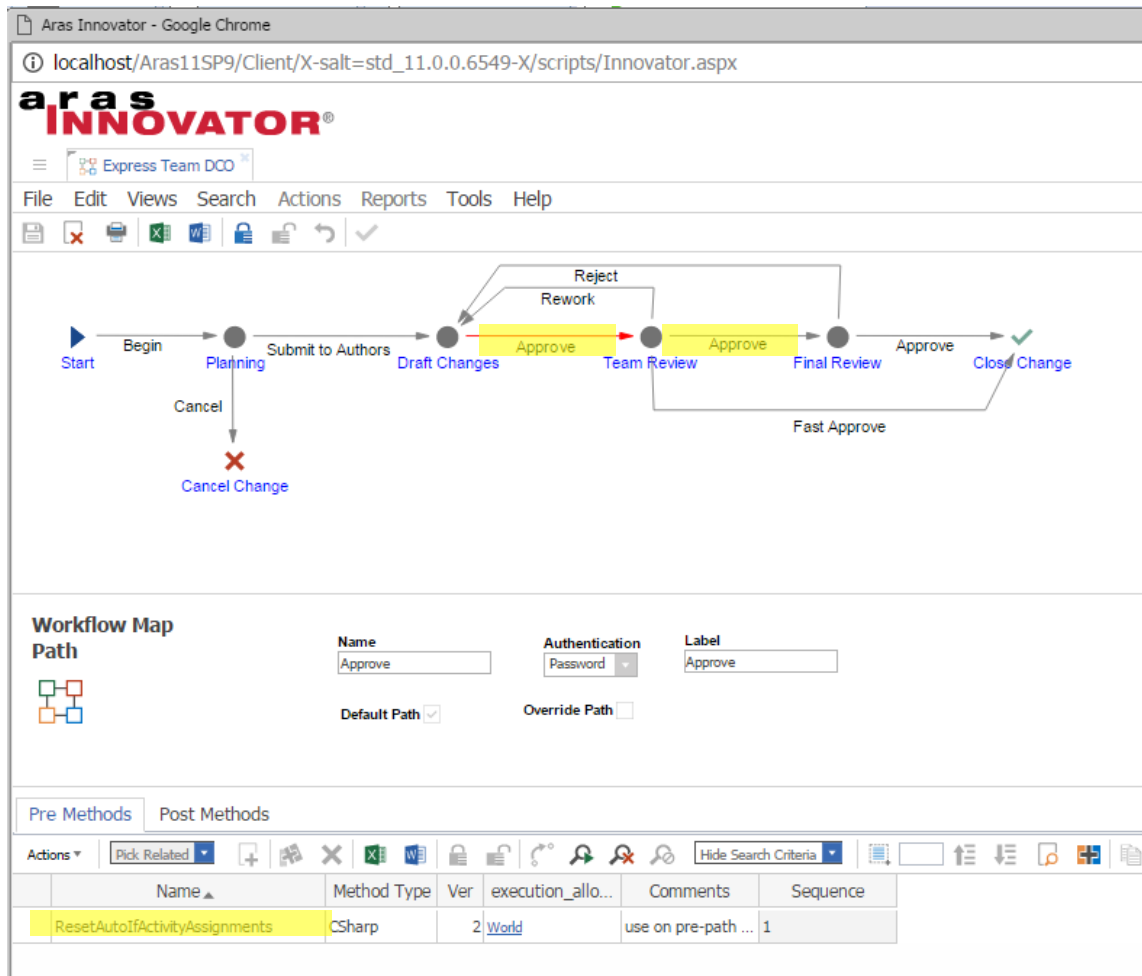
Help

Name	Required	For All Me...	Voting Wei...	Escalate To [...]
Owner	<input type="checkbox"/>	<input type="checkbox"/>	100	

# Sequential 2 Step (Team) Review Workflow „Express Team DCO“

You can use this workflow instead of standard „Express DCO“ on Documents

In conjunction with logic for automated review activities the assignments of the review steps can be empty and then the DCO will close right after „Draft Changes“



# Example to trigger logic to “clone” defined other Activities from an Activity on the Workflow Map

Aras Innovator - Google Chrome

localhost/Aras11SP9/Client/X-salt=std\_11.0.0.6549-X/scripts/Innovator.aspx

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Express Team DCO

File Edit Views Search Actions Reports Tools Help

Workflow Map:

```
graph LR
    Start((Start)) --> Begin((Begin))
    Begin --> Planning((Planning))
    Planning --> Submit[Submit to Authors]
    Submit --> DraftChanges((Draft Changes))
    DraftChanges --> Approve1[Approve]
    Approve1 --> TeamReview((Team Review))
    TeamReview --> Approve2[Approve]
    Approve2 --> FinalReview((Final Review))
    FinalReview --> Approve3[Approve]
    Approve3 --> FastApprove[Fast Approve]
    FastApprove --> CloseChange((Close Change))
    CloseChange --> End((End))
    DraftChanges --> Cancel[Cancel]
    Cancel --> CancelChange((Cancel Change))
    TeamReview --> Reject[Reject]
    TeamReview --> Rework[Rework]
    Rework --> DraftChanges
    Approve1 --> Reject
    Approve1 --> Rework
    Approve2 --> Reject
    Approve2 --> Rework
    Approve3 --> Reject
    Approve3 --> Rework
```

Activity Template:

Name: Draft Changes Label: Draft Changes

Message: Update affected documents

Expected Duration: Reminder Interval: Autom: C: Wait Fo

Timeout Duration: Reminder Count:

Assignments Paths Notifications Tasks Variables Server Events Promotions

Actions: Pick Related

Name	Method Type	Ver	execution_all...	Comments	Event
Clone WorkflowActivityToPending	CSharp	3	World	use with Workflo...	On Activate

Method: Clone WorkflowActivityToPending (read only) - Windows Internet Explorer

Comment: use with Workflow activity "onActivate" event

```
001 'MethodTemplateName=VBMain;
002 '
003 ' NOTE:
004 ' this method only works if the Life Cycle Map "Workflow Process" has a
005 ' transition from "Closed" to "Pending" for role "Aras PLM".
006 ' you must log on as "root" to add this transition
007 '
008 ' Clones defined activities to get "Pending" instance in the workflow process.
009 ' This is useful when using dynamic activity assignments. When looping back from a
010 ' the Activity to loop back from must be updatable by the Workflow owner to set assignme
011 ' In state "Closed" updates are Not permitted. This is why this Activity should be
012 ' before it is started again
013 '
014 ' Unfortunately this does not work on "post" path event of the workflow. which you
015 ' The context in path events does not give information from which activity the pa
016 '
017 ' This is why a defined list of Activity names, this logic will be applied to, mus
018 ' You must enclose these names in single quotes '' and separate them by comma , !!
019 '
020 Dim activitiesToPromoteBackToPending As String = "'Team Review','Final Review'"
021
022 Dim inn As Innovator = Me.getInnovator()
```



# Automate Sequential Review Activities on a Workflow

Method Name: „ResetAutoIfActivityAssignments“

Logic must be triggered (added) to **pre-Path Method on Workflow Map**

Example: Workflow Map „Express Team DCO“

These Activities must be set to „Automatic“

These Paths must trigger the new method on „Pre-Transition“

Workflow Map Path

Name: Approve, Authentication: Password, Label: Approve

Default Path: ☒, Override Path: ☐

Pre Methods | Post Methods

Name	Method Type	Ver	execution_allo...	Comments	Sequence
ResetAutoIfActivityAssignments	CSharp	2	<a href="#">World</a>	use on pre-path ...	1

# Save Data from Workflow to Affected Items

## New Method: „Save WFdata to AffectedItems“

This logic is an example how data triggered from the workflow context can be written to affected items of an ECO or DCO.

The image displays three screenshots of the Aras Innovator web application interface, illustrating the workflow process and data capture.

**Top Left Screenshot:** Shows the "DCO" (Design Change Order) form. The "Number" field is "DCO-00001001". The "Title" is "Initial Release". The "Change Reason" is "Released". The "Change Coordinator" is "Innovator Admin" and the "Team" is "Product Team". The "Release Date" is "3/3/2017".

**Top Right Screenshot:** Shows the "Workflow Process" for "DCO-00001002". The workflow steps are: Start -> Begin -> Submit to Authors -> Draft Changes -> Approve -> Team Review -> Final Review -> Close Change. The "Active Date" is "3/3/2017".

**Bottom Screenshot:** Shows the "Document" form. The "Document Number" is "D1000". The "Revision" is "A". The "State" is "Released". The "Assigned Creator" is "Innovator Admin". The "Designated User" is "Innovator Admin". The "Effective Date" is "3/3/2017 12:43:31 PM". The "Last Approval Date" and "Last Approver" fields are empty.

Red dashed arrows indicate the flow of data from the workflow process to the Document form, specifically from the "Approve" and "Final Review" steps to the "Last Approval Date" and "Last Approver" fields.

On the DCO 's workflow these transitions will trigger this new method on „Post-Path-Event“

The method „Save WFdata to AffectedItems“ resolves the affected Items connected to the DCO and then sets today's date and the current user id to the new fields on Document items (Last Approval Date, Approver) DCO Workflow.

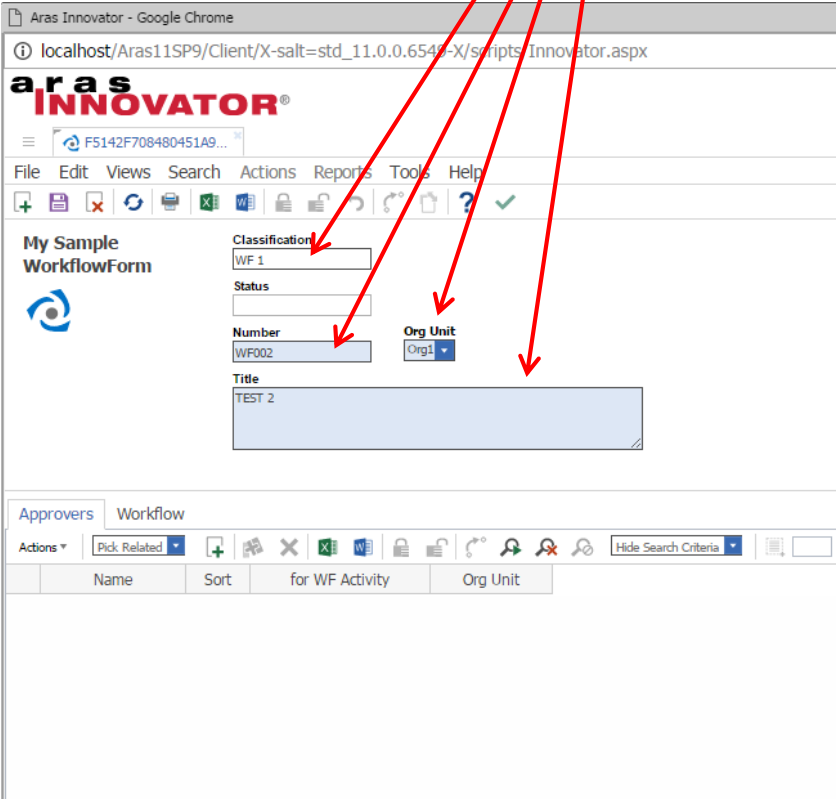
# (custom) Sample Workflow Solution

with Submit Button  
and Default Approver from Approver Matrix

# Testing: Default Approvers

Create New

Fill these values



My Sample WorkflowForm

Classification: WF 1

Status: New

Number: WF002


Org Unit: Org1

Title: TEST 2

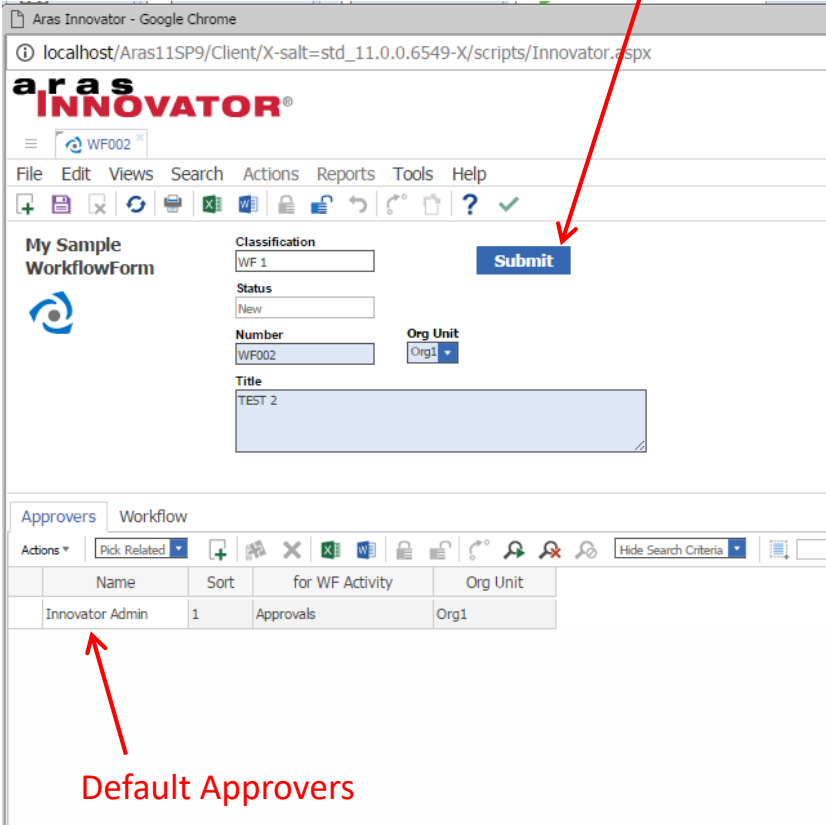
Approvers Workflow

Name	Sort	for WF Activity	Org Unit
------	------	-----------------	----------

First Save



Button shows



My Sample WorkflowForm

Classification: WF 1

Status: New

Number: WF002

Org Unit: Org1

Title: TEST 2

Submit

Approvers Workflow

Name	Sort	for WF Activity	Org Unit
Innovator Admin	1	Approvals	Org1

Default Approvers

Click „Submit“

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localhost/Aras11SP9/Client/X-salt=std\_11.0.0.6549-X/scripts/Innovator.aspx

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WF002

File Edit Views Search Actions Reports Tools Help

My Sample WorkflowForm

Classification: WF 1

Status: New

Number: WF002

Org Unit: Org1

Title: TEST 2

**Submit**

Approvers Workflow

Actions Pick Related

Name	Sort	for WF Activity	Org Unit
Innovator Admin	1	Approvals	Org1

Submit

Next Status

Aras Innovator - Google Chrome

localhost/Aras11SP9/Client/X-salt=std\_11.0.0.6549-X/scripts/Innovator.aspx

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WF002

File Edit Views Search Actions Reports Tools Help

My Sample WorkflowForm

Classification: WF 1

Status: Submitted

Number: WF002

Org Unit: Org1

Title: TEST 2

Approvers Workflow

Actions Pick Related

Name	Sort	for WF Activity	Org Unit
Innovator Admin	1	Approvals	Org1

Inbaket shows WF has started

Aras Innovator - Google Chrome

localhost/Aras11SP9/Client/X-salt=std\_11.0.0.6549-X/scripts/Innovator.aspx

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WF002

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Contents Properties

Administration  
Change Management  
Dashboards  
Design  
Documents  
My Innovator  
My Desktop  
My Discussions  
My InBasket  
My Reports  
Search  
Search Center  
Portfolio

**InBasket**

Created By: Innovator Admin  
Created On: 3/3/2017  
Modified By: Innovator Admin  
Modified On: 3/3/2017  
Claimed By:  
Major Rev: A  
Generation: 1  
State: Active

[...]	Type	Source Item	Activity	Start Date [...]	Due Date [...]	Status	Assigned To [...]	Instructions	Work Item	My Assignment
	Workflow Task	WF0001	Approvals	3/3/2017	3/3/2017	Active	Innovator Admin	Please Approve...	WF0001	1
	Workflow Task	WF002	WF1 Submitted	3/3/2017	3/3/2017	Active	Administrator			

Complete Task  
Claim Task  
Print  
Export To Excel  
Export To Word  
View Gantt Chart

### Workflow Activity Completion

Workflow: WF002  
Activity: WF1 Submitted

**Tasks**

Sequence	Required	Description	Complete

**Vote**

Vote: do Review Delegate to: ...

Comments:

**Authentication**

Password: E-Signature:

Complete Save Changes Cancel

Aras Innovator - Google Chrome

localhost/Aras11SP9/Client/X-salt=std\_11.0.0.6549-X/scripts/Innovator.aspx

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WF002

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Permissions History Revisions Where Used Structure Browser **Workflow** LifeCycle

Classification WF 1

Status In Review

Member WF002

Org Unit Org1

Title TEST 2

Approvers Workflow

**Workflow History Report**

Item: WF002 Started By: Innovator Admin

WF 1 Started On: 3/3/2017 1:38:38 PM

Current Status is: Active Completed On:

Activity	State	Assigned To	Completed By	How Voted	When	Comments
WF1 Submitted	Closed	Administrators	Innovator Admin			
Approvals	Active	Innovator Admin		<a href="#">VOTE NOW</a>	3/3/2017 1:42:09 PM	

View Workflow

Aras Innovator - Google Chrome

localhost/Aras11SP9/Client/X-salt=std\_11.0.0.6549-X/scripts/Innovator.aspx

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WF002 WF002

File Edit Views Search Actions Reports Tools Help

**Workflow Process**

Name WF002

Description WF 1

Started By Innovator Admin

Current Status Active

Active Date 3/3/2017

Closed Date

Label

Process Owner Creator

View Signoffs Cancel Workflow

Start Go WF1 Submitted do Review Approvals Approve Approved

Back to Submitted

Cancel Cancelled

**WF Utilites logic has resolved approvers**

**Activity Summary**

Name Managed By Role

Approvals

Status Active

Message Please Approve...

**Assignments**

Name[...]	Required	For All	Voting Weight	Escalate To
Innovator Admin	<input type="checkbox"/>	<input checked="" type="checkbox"/>	100	

# Configuration of Approval Matrix

Workflow Approvers Matrix - 38A505D7EBDD400E982884A36DBDDDD81 (schreibgeschützt) - Google Chrome

localhost/innovatorserver11sp7/Client/X-salt=2\_11.0.0.6423-X/Modules/aras.innovator.core.ItemWindow/tabItemVie

Datei Bearbeiten Ansichten Suche Aktionen Reports Registerkarten Hilfe

Workflow Approvers Matrix

Organization: Org1

Apply To Item Type: [My Sample WorkflowForm](#)

Status: Active

Description:

Must promote to „Active“

Default Approvers to be used for OrgUnit

Approvers

Name	Sort	Approve Activity
Mike Miller	1	Approvals
Terry Adams	2	Approvals

Fertig

Objekte 1-2 von 2. Seite 1 von 1

Aras Innovator