

Elevate Your Approval Processes

Mastering Complex Workflows

Bob McDonald, Senior Drupal Architect



Kalamuna

About me



Bob McDonald (he/him)

Senior Drupal Architect

www.linkedin.com/in/ultrabob

- [ultrabob](#) on drupal.org
- Idaho -> Japan -> Canada
- New to North American Drupal talks
- Love making stuff.
- Good at Drupal-based approval systems.
- Care deeply about empathetic, user-first systems.

Agenda

- 01** Core Workflows
- 02** My Drupal Journey
- 03** Implementation Consideration
- 04** Useful Tools
- 05** Practical Examples

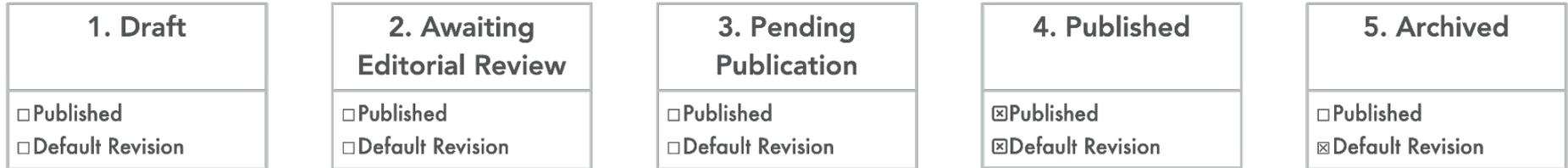
Core Workflows

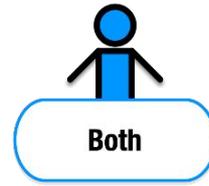
01

Workflow Core Modules

- Workflows module
 - Create workflows with state, transitions, and default states
 - Introduces a “workflow type” plugin manager
 - Workflow type plugin links Workflows with Drupal
- Content Moderation
 - Is the core workflow type plugin
 - Links workflow with entities, controls publishing
 - Intended for editorial type workflows

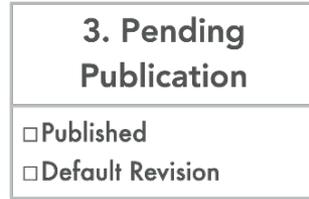
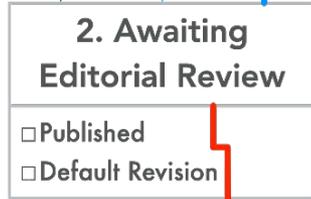
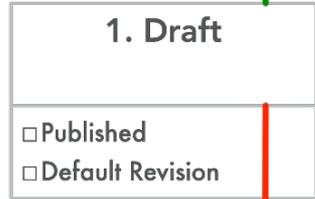
Core workflows example



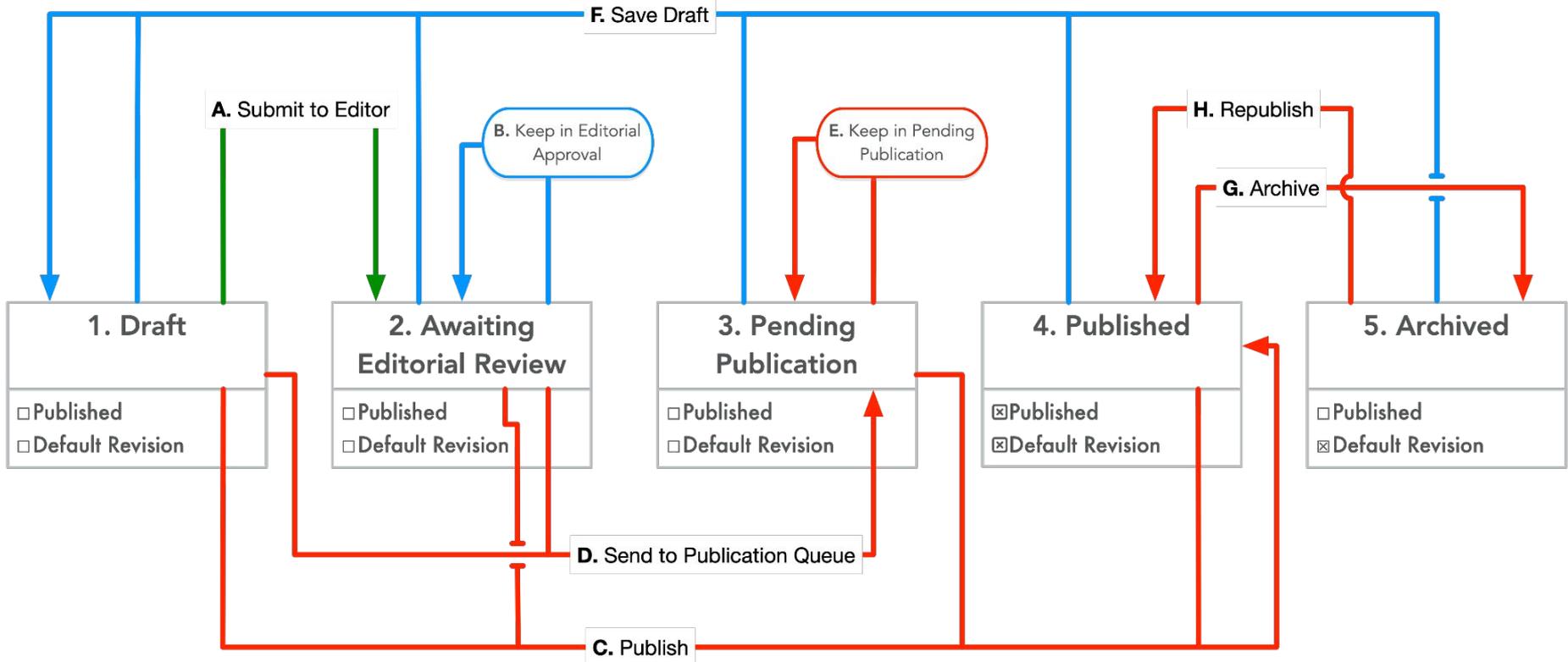


A. Submit to Editor

B. Keep in Editorial Approval



C. Publish



My Drupal Journey

02

My Drupal Journey

1. First full Drupal project in 2015, institute's publication database
 - Xoops → Drupal 7 migration
2. Travel (mission) approval system in D7
3. Migrate Publication database and whole site to D8 with publication approval process
4. Migrate travel approval system to Drupal 9 and add a few more approval systems to it. (Fundraising Proposal Review and Project Database)
5. Currently building a system for accepting donations for newcomers to Canada, vetting them, and matching them with support agencies.



What did I learn?

Notifications

Keep things moving

Requirement

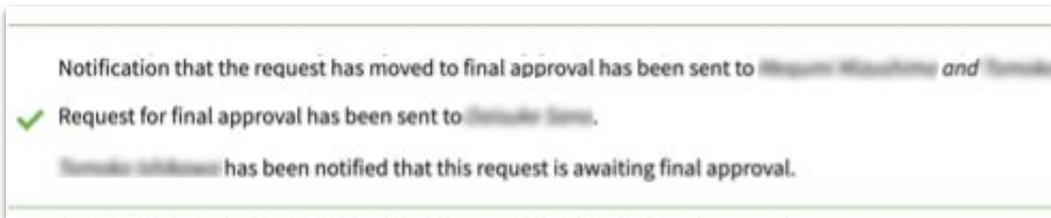
- On Screen notifications
- Off-site notifications
 - Reminders.

Challenges

- You'll need to edit your mail templates
- Can repurpose for reminders

Solutions

- Message stack or other contrib for push notifications.



Dear [redacted],

[redacted] has submitted a new proposal titled "令和5年度 侵略的外来種に関する国際会議等開催支援業務の一部の業務" for your review. Please carefully review it, provide your advice, and when it is ready, approve it to move on to SMO PM Review.

Dear [redacted],

REMINDER: This is a reminder that this proposal has been awaiting approval for 3 days.

[redacted] has submitted a new proposal titled "令和5年度 侵略的外来種に関する国際会議等開催支援業務の一部の業務" for your

Clear indicators of Status

Build trust: fair and transparent

Requirements

- Clear indicator of status
- History of request actions

Challenges

- Appropriate status indicators with approver names
- Can be hard to understand overall flow

Solutions

- State API
- Timeline interface.

#293 **Proposal** **Awaiting Supervisor Approval** ([Name Redacted])
AP-PLAT 適応事例集コンテンツ強化支援業務 [Review Proposal](#)

#292 **Proposal** **Awaiting Supervisor Approval** ([Name Redacted])
令和5年度IPCC都市特別報告書作成支援に係る日本の取組紹介及び意見交換に関する業務

Approval Log

- 02/21/2023 - 17:22 -- Mission Request is approved by [Name Redacted].
- 02/21/2023 - 17:21 -- [Name Redacted]'s travel was approved by [Name Redacted].
- 02/15/2023 - 16:08 -- [Name Redacted] Travel for [Name Redacted]'s travel was approved by [Name Redacted].
- 02/15/2023 - 16:08 -- [Name Redacted]'s travel was approved by [Name Redacted].
- 02/15/2023 - 16:08 -- All Funds have been approved, request is waiting for final approval.
- 02/15/2023 - 16:08 -- IPBES TSU IPBES-TSU-IAS(UNEP) fund approved by [Name Redacted].
- 02/15/2023 - 13:45 -- Mission Request is submitted for Approval by [Name Redacted] and request is waiting for funder approval.

QUICK REVIEW



Clear action opportunities

If you want it used, make it easy

Requirements

- My Actions Dashboard
- Action opportunities everywhere
- Guide users to do the right thing

Challenges

- Tracking actions relevant to each user
- Tracking approval state
- Hard to ensure focus on edit form

Solutions

- Use state API to precalculate status and awaiting messages
- Add a checklist and validation to edit forms

The screenshot shows a 'MY ACTIONS' dashboard with two items:

- #112**: Project Awaiting accounting team budget finalization. Description: 令和5年度国際的な循環経済・資源効率性の推進に関する調査検討業務. Action: Prepare project entry.
- #161**: Proposal Awaiting General and Accounting SMO reviews. Description: Zero Plastic Waste Island (Closed Island Plastic Recycling System). Action: Review Proposal.

The screenshot shows a 'CONFIRMATION CHECKLIST' with the following items:

- FVA Updated
- Current Budgets Added
- Project amount and currency verified
- Title information is aligned with the official project name in the contract.

Buttons at the bottom: Keep with Accounting, to Final Confirmation

Default Transition interface

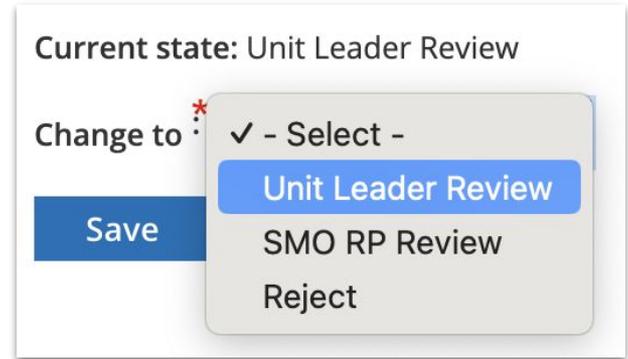
There must be a better way!

Challenge

- Some don't notice the dropdown or the ensuing error
- We are selecting the states, not the transitions
 - Easy to select the wrong thing

Solution

- Workflow Buttons module



Edit Mode

Keep in Unit Leader Review

Approve and send to SMO RP Review

Reject

Preview

View Mode

Approve and send to SMO RP Review

Reject

More detail needed...

Requirements

- Collect extra detail during action

Challenge

- Get the detail without the edit form
- For required feedback action is the trigger
- Some feedback is only approval process relevant.

Solutions

- Tie feedback opportunity to action buttons
- AJAX modal for required feedback
- Text area above the action buttons for optional feedback
- Pass approval feedback via notification.

Please provide a reason ✕

Rejection Reason *

Please comment instead of rejecting if the deficiency can be readily remedied.

Unit Leader Comment

Please review what is best allocation of RCC staffs for this pr with UNFCCC and working condition of A6IC.

[▶ **COMMENTS**](#)

Proving Value and Planning Ahead

Requirement

- Prove system value

Challenges

- If not planned in advance, hard to recover

Solution

- Collect timestamps on transition.
- **Plan ahead!**

Lifetime Donations

5

lifetime donations

Lifetime Housing Donations

5

lifetime housing donations

Current Agency Users

2

agency users.

AVG Time from Donation to Claim

1

donations claimed in an average time of 3 days

Implementation Considerations

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Implementation Details to Consider – Flow

- Logical Stages? (States)
- Actions (transitions)
 - Think about “Froms” and “Tos” from all angles.
 - Who can use each transition?
 - How can you identify them?
 - Do you have the data on system?
 - How will you track multiple approvals on a stage?
 - Are the actions called the same thing for all classes of user?
 - Do you need additional input?
- Upon transition, who should be notified about what?
 - Don't forget the requestor
 - On screen messages are important too
 - Templates
 - Consider reminders



Other Implementation Details

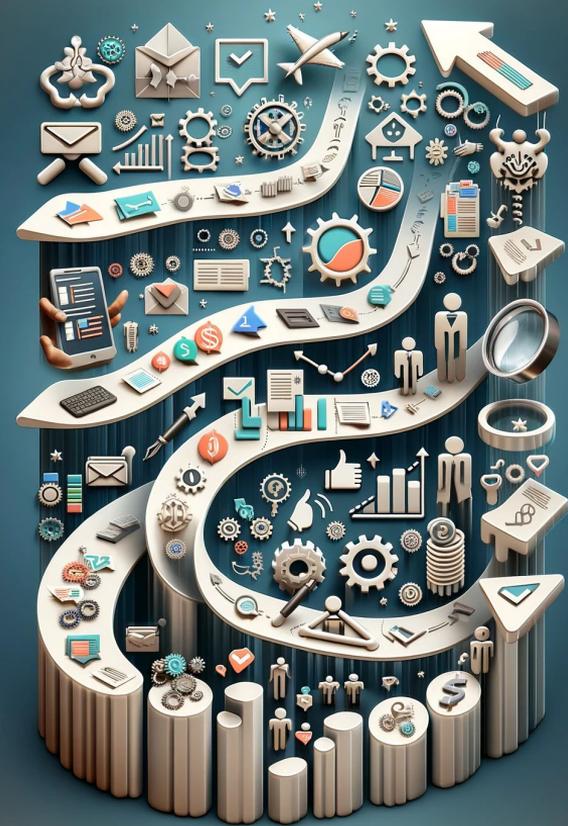
Reporting

- What data should be captured to enable statistics?
 - Time to approval
 - Time between transitions
 - Percentage Approved
- Self serve? Exportable? Filters?

In-process approval communication

Implementation details

- E.g. Time divisions
- Better to gather important details in advance



Useful Tools

05

Tools for Approvals

- Workflow Buttons
 - https://www.drupal.org/project/workflow_buttons
- Core Drupal State API
 - <https://www.drupal.org/docs/8/api/state-api/overview>
- Form API / Ajax Modal Dialogs
 - <https://www.drupal.org/docs/drupal-apis/form-api>
 - <https://www.drupal.org/docs/develop/drupal-apis/ajax-api/ajax-dialog-boxes>

Tools for Communications

- The message Stack of contrib modules
 - <https://www.drupal.org/node/2919768>
- Cron tasks with State API and Queues for reminders
 - https://api.drupal.org/api/drupal/core%21core.api.php/function/hook_cron/10
 - <https://api.drupal.org/api/drupal/core%21core.api.php/group/queue/10>
- Content Moderation Notifications
 - https://www.drupal.org/project/content_moderation_notifications

Tools for Debugging/Admin

- Mail Safety
 - https://www.drupal.org/project/mail_safety
- Masquerade
 - <https://www.drupal.org/project/masquerade>
 - If you use this in production be careful about who you provide usage permission to, and consider a policy of editing the approval log when acting on users' behalf.

```
use Symfony\Component\HttpFoundation\Session\SessionInterface;  
if ($this->session->isStarted() && $this->session->has('masquerading')) {  
    $original_uid = $this->session->get('masquerading');  
}
```

Code Examples

 https://github.com/UltraBob/transition_helper

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Service To Get Transition Id When Saving Entity

```
use Drupal\content_moderation\ModerationInformationInterface;
use Drupal\Core\Entity\ContentEntityInterface;

public function getTransition(ContentEntityInterface $entity): string {
    // Validate that the entity is revisionable and has a moderation state here.
    $newState = $entity->moderation_state->first()?->value;
    $originalState = $this->moderationInformation->getOriginalState($entity)->id();
    $workflow = $this->moderationInformation->getWorkflowForEntity($entity);
    $transitions = $workflow->getTypePlugin()->getTransitions();

    foreach ($transitions as $transition) {
        if ($transition->to()->id() == $newState && in_array($originalState, array_keys($transition->from()))) {
            return $transition->id();
        }
    }

    throw new \RuntimeException('Transition not found.');
```

Removing or Modifying a Workflow Button

```
/**
 * Remove save as-is buttons from form display.
 * Update workflow button text for agency users.
 *
 * Implements hook_form_alter().
 */
function my_module_form_alter(&$form, \Drupal\Core\Form\FormStateInterface $form_state, $form_id) {
  $moderation_state = $form["moderation_state"]["widget"][0]["#default_value"] ?? null;
  // Remove Save as-is buttons from workflow button view widget
  if ($form_id == 'mymodule_myentity_form' &&
  isset($form["moderation_state"]["widget"][0]["#options"][$moderation_state])) {
    unset($form["moderation_state"]["widget"][0]["#options"][$moderation_state]);
    return;
  }
  if (!in_array($form_id, ['mymodule_myentity_edit_form', 'mymodule_myentity_add_form'])) {
    return;
  }
  $current_user = Drupal::currentUser();
  if (in_array('agency', $current_user->getRoles()) && $moderation_state == 'claimed_pending') {
    $form["moderation_state"]["widget"][0]["#options"]['available'] = 'Release Listing';
  }
}
```

Creating a mail message

```
use Drupal\message\Entity\Message;
use Drupal\message_notify\MessageNotifier;

public function reminderMessage(Node $node, string $template, UserInterface $user = NULL, string $target_email = '', string $uid = '') {
    $user = $user ?? $node->getOwner();
    $uid = $uid ?: $user->id();
    $message = Message::create(
        [
            'template' => $template,
            'uid' => $uid,
        ]
    );
    $message->set('field_message_node_content', $node->id());
    if (!empty($target_email)) {
        $options = ['mail' => $target_email];
    }
    $message->save();
    $this->notifier->send($message, $options);
}
```

Modal for gathering additional information

```
$form['rejected'] = [
  '#name' => 'reject',
  '#type' => 'link',
  '#title' => $this->t('Reject'),
  '#url' => Url::fromRoute('mymodule.open_modal_form', [
    'nid' => $nid,
  ]),
  '#attributes' => [
    'class' => [
      'use-ajax',
      'button',
    ],
  ],
];
```

```
mymodule.open_modal_form:
  path: '/mymodule/rejects/config/modal_form/{nid}'
  defaults:
    _title: 'Please provide a reason for the rejection.'
    _controller: '\Drupal\mymodule\Controller\ModalFormMymoduleController::openModalForm'
  requirements:
    _role: 'staff+administrator'
```

Questions?

Please provide feedback

<https://mid.camp/8523>

Thank you :)



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