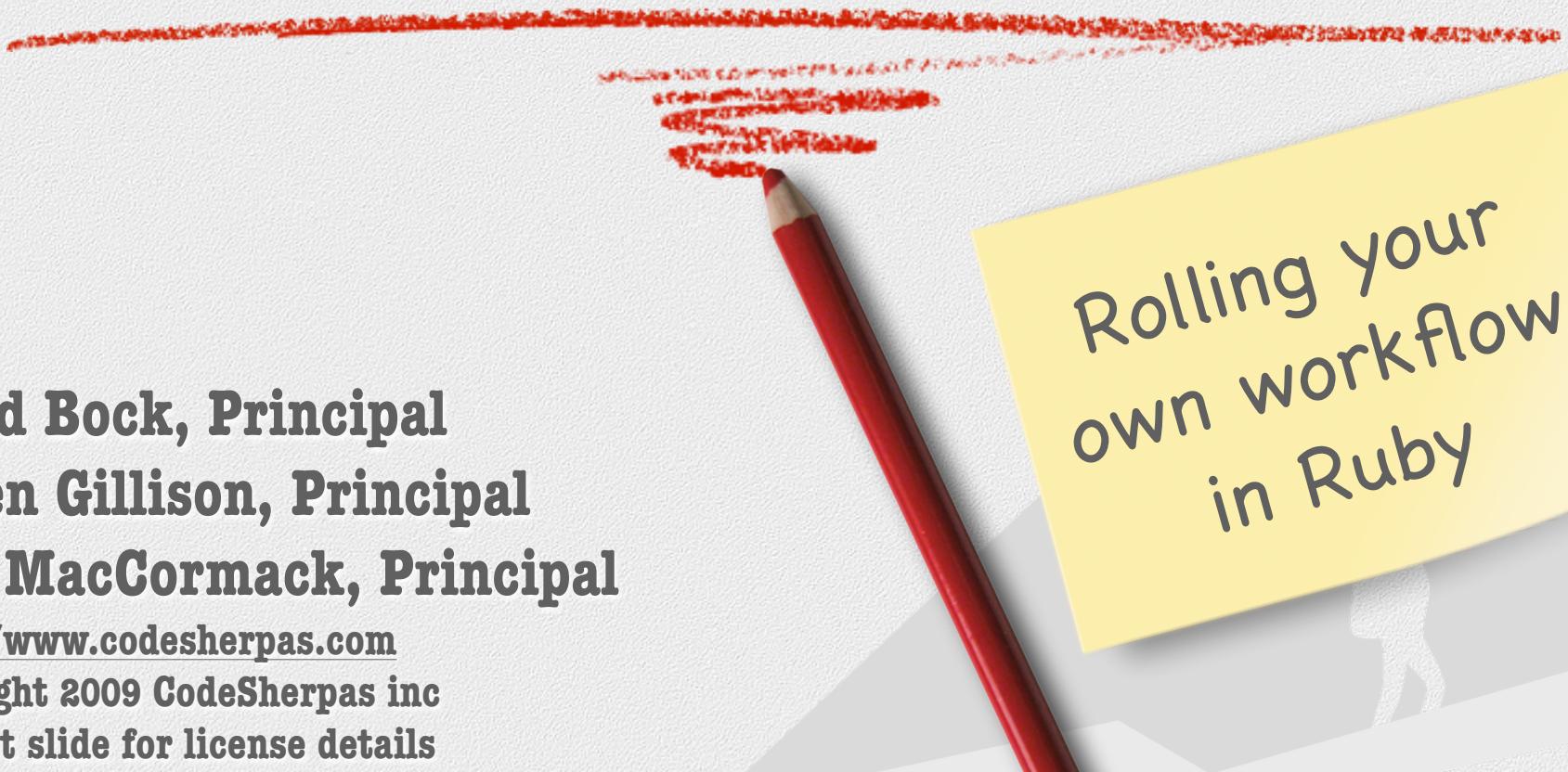


Modeling Workflow in Ruby and Rails: State and Process-Based



David Bock, Principal

Karen Gillison, Principal

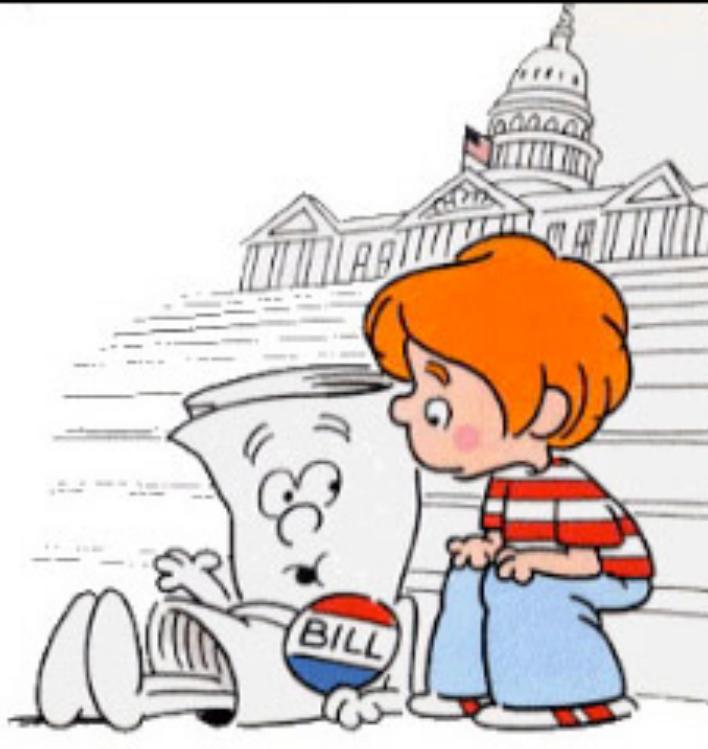
Kim MacCormack, Principal

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(almost) **Everything** I Needed to Know about **Workflow** I Learned from **Schoolhouse Rock**



David Bock, Principal
Karen Gillison, Principal
Kim MacCormack, Principal

<http://www.codesherpas.com>
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Who Is This Guy?

- Spent 11 years writing Java-based Workflow apps for the U.S. State Department
 - Tracking the Removal of Landmines in Bosnia
 - Tracking the Licensing/Import/Export of Nuclear/Military/Biological/Dual-Use Materials Around the World
- Recently built workflow apps for ‘other major clients’
- <http://www.twitter.com/bokmann>



Phone: 888.650.7829 ext. 7
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525-K East Market Street, #190
Leesburg, VA 20176

David Bock

dbock@codesherpas.com

WARNING:

There are companies that
hear you say “workflow”
and will try to sell you
large, expensive
“workflow engines”



Workflow Management Coalition

Home

http://www.wfmc.org/

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WFMC WORKFLOW MANAGEMENT COALITION

Maximizing State & Local Revenue Collections
Free Metastorm Webinar / Tuesday, June 2, 2009
1:00pm EDT / 10:00am PDT

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Workflow Management Coalition
WfM C
1993-2008

15 YEARS OF
PROCESS THOUGHT
LEADERSHIP

About Us
The WfMC has over 300 member organizations worldwide, representing all facets of workflow, from vendors to users, and from...
More...

Founded in 1993, the Workflow Management Coalition (WfMC) is a global organization of adopters, developers, consultants, analysts, as well as university and research groups engaged in workflow and BPM. The WfMC creates and contributes to process related standards, educates the market on related issues, and is the only standards organization that concentrates purely on process. The WfMC created Wf-XML and XPDL, the leading process definition language used today in over 80 known solutions to store and exchange process models. XPDL is a process design format for storing the visual diagram and all design time attributes.product attributes.

Workflow Management Coalition Announces Results of BPMN Model Portability Validation

San Diego, CA, Mar 25, 2009 (PRWeb.com via COMTEX) --The Workflow Management Coalition, the leading industry association and standards body dedicated to business process management and workflow, has announced the first results of BPMN model portability validation.

"This is a critical milestone for both business process modeling and the deployment of BPM systems, explained WfMC Executive Director, Nathaniel Palmer. "The work done by the WfMC Conformance Working Group, under the leadership of chair Robert Shapiro, provides the first-ever multi-product test results, and provides the first real risk management strategy

WFMC Login

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WFM**C**



WFM**C**

All kinds of educational material

Buzzword-Compliance Police HQ

Several Dozen Vendors

Some Pretty Cool Tools

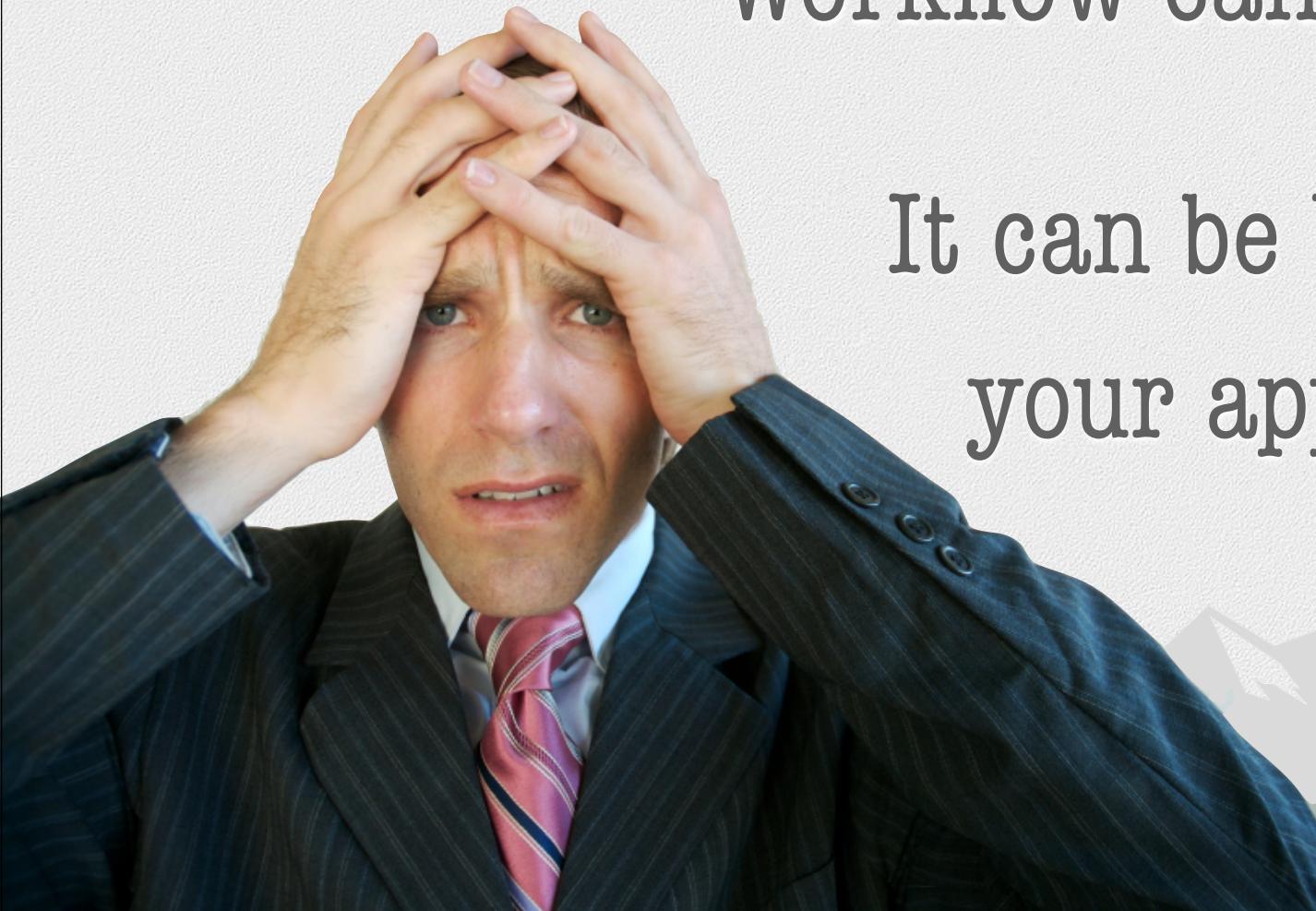




You probably don't need any of that

Workflow can be simple

It can be baked into
your application



What is “Workflow”?

- Long-lived process
- Multiple users/actions towards a common goal
- Actions are sequential/concurrent depending on model
- Users have responsibilities/visibility
- Users perform tasks on workitems
- Users may have ‘groups’ or ‘roles’

What is **not** “Workflow”?

- Page Flow
- Step-by-step Wizards
- A series of disjoint, unrelated tasks
- Your job description
- State Machines (but it's a good start)
- Ticketing Systems
- Content Management Systems (although they may have workflow features)

*The essence of workflow:
structured collaboration.
several people working
together towards a
common goal.*

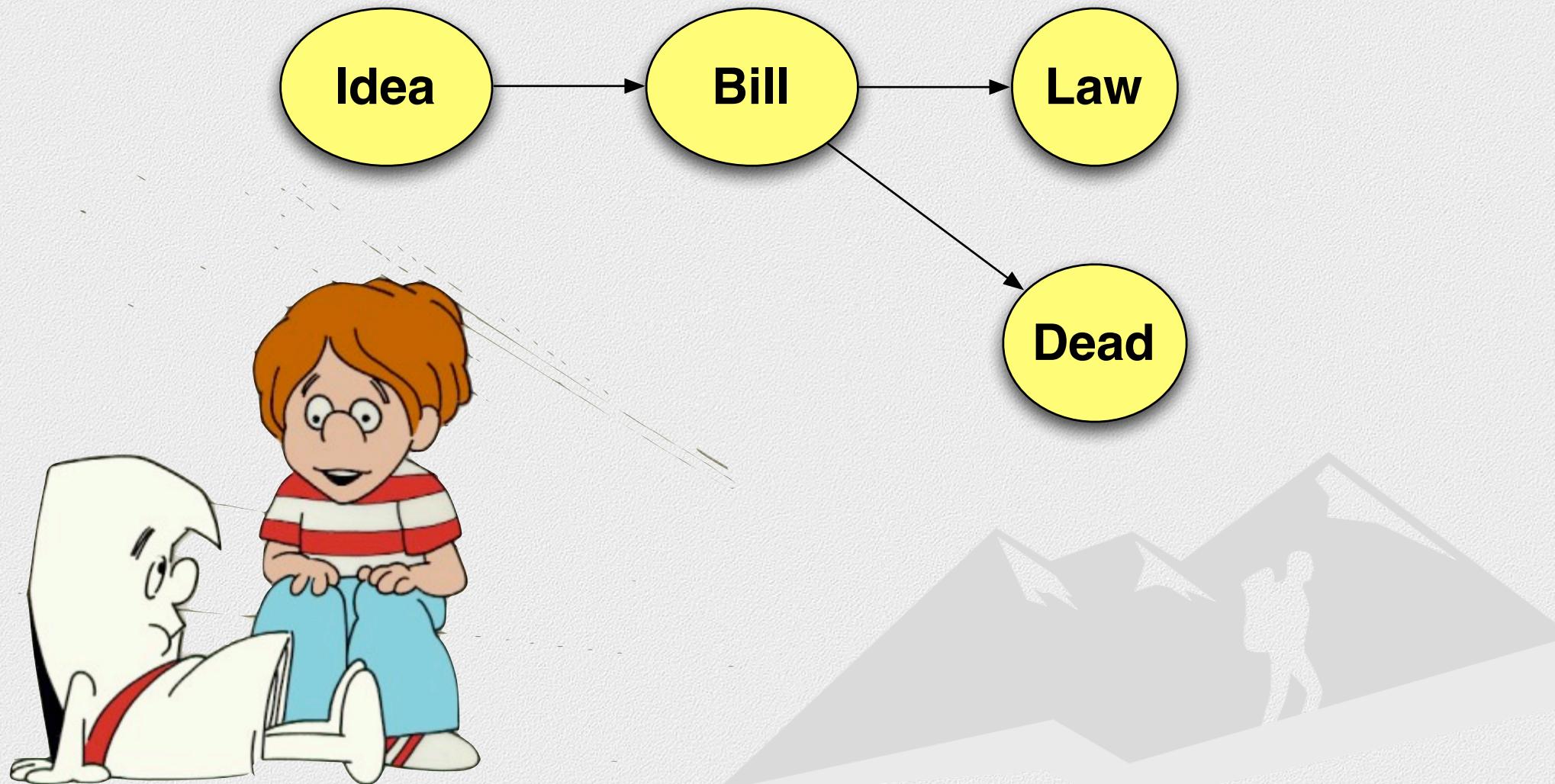


State-Based

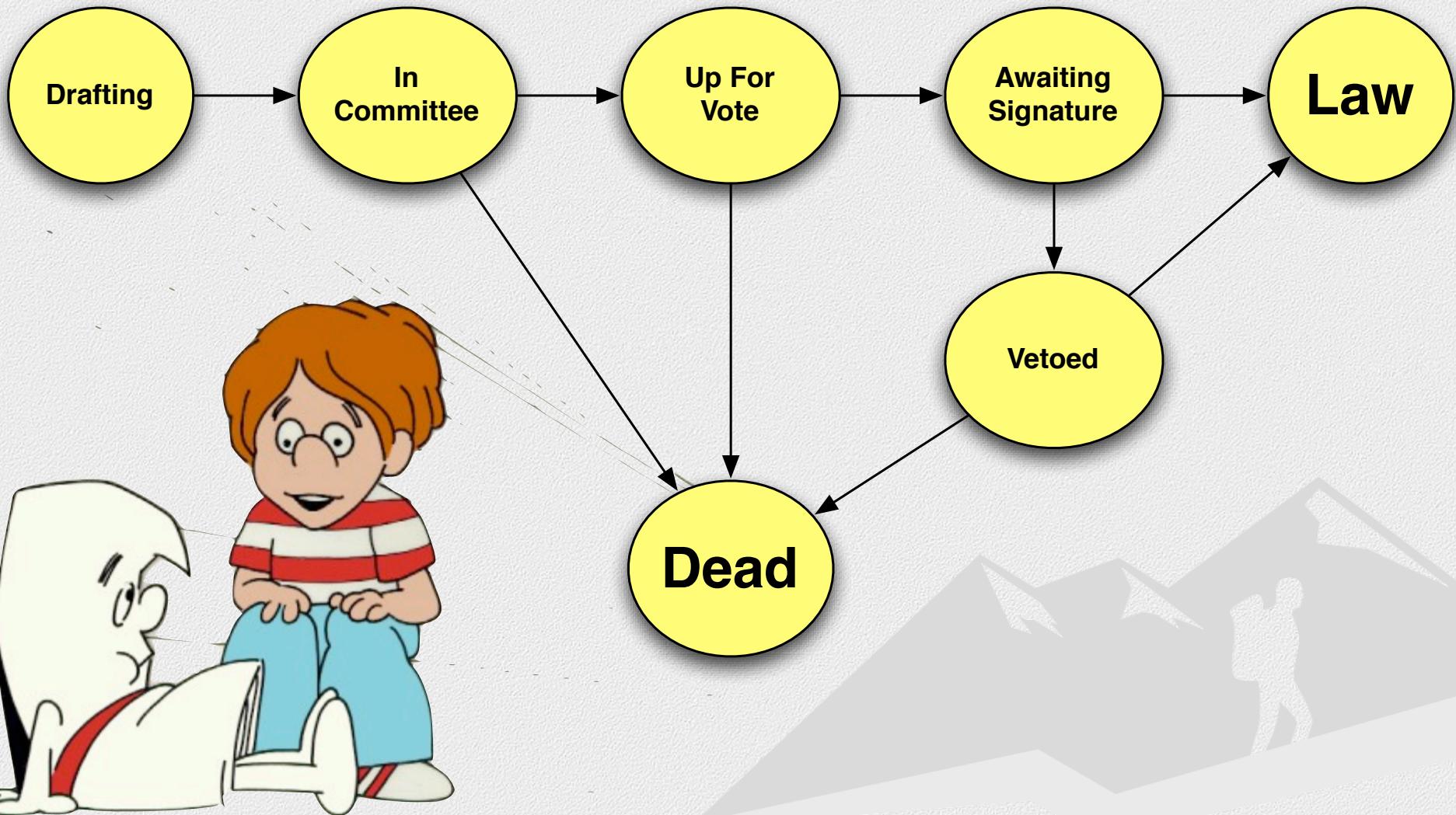
Process-Based



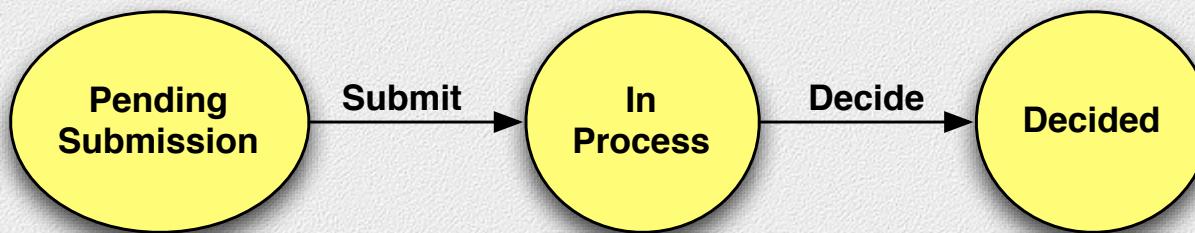
State-Based Workflow



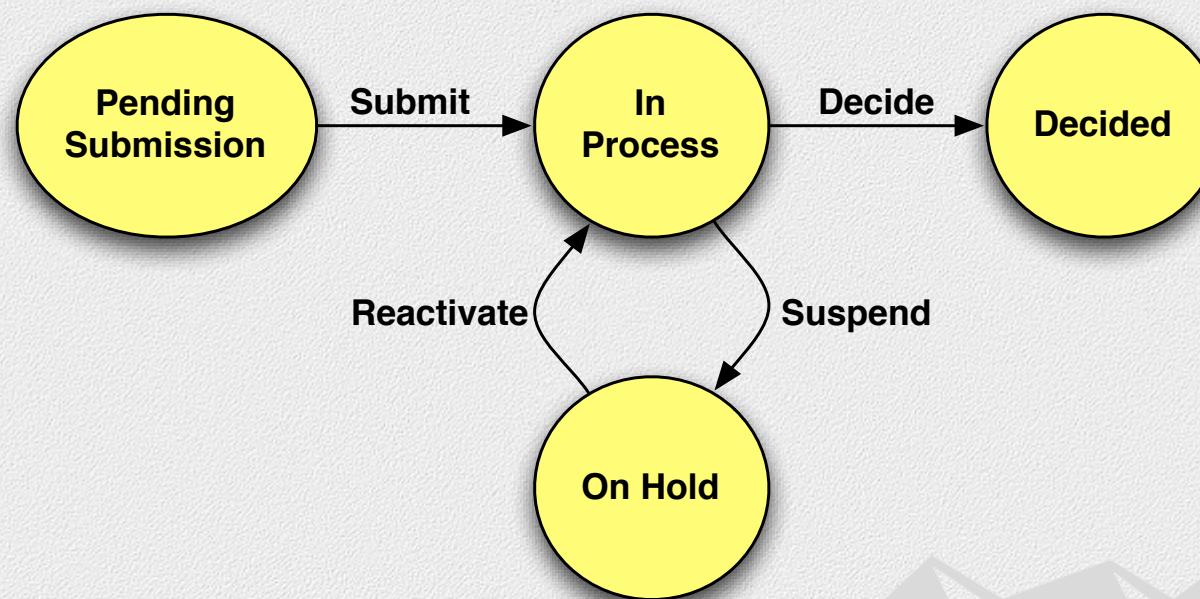
State-Based Workflow



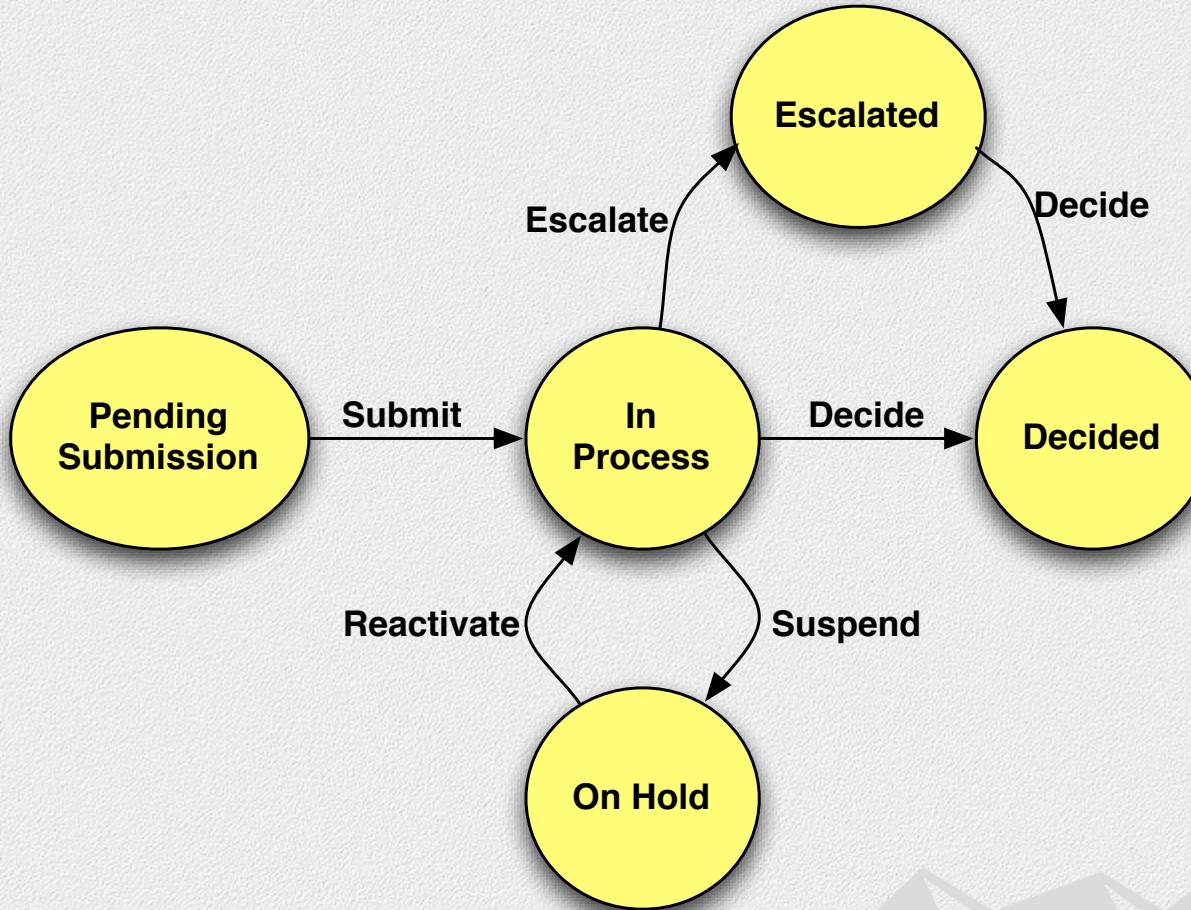
State-Based Workflow



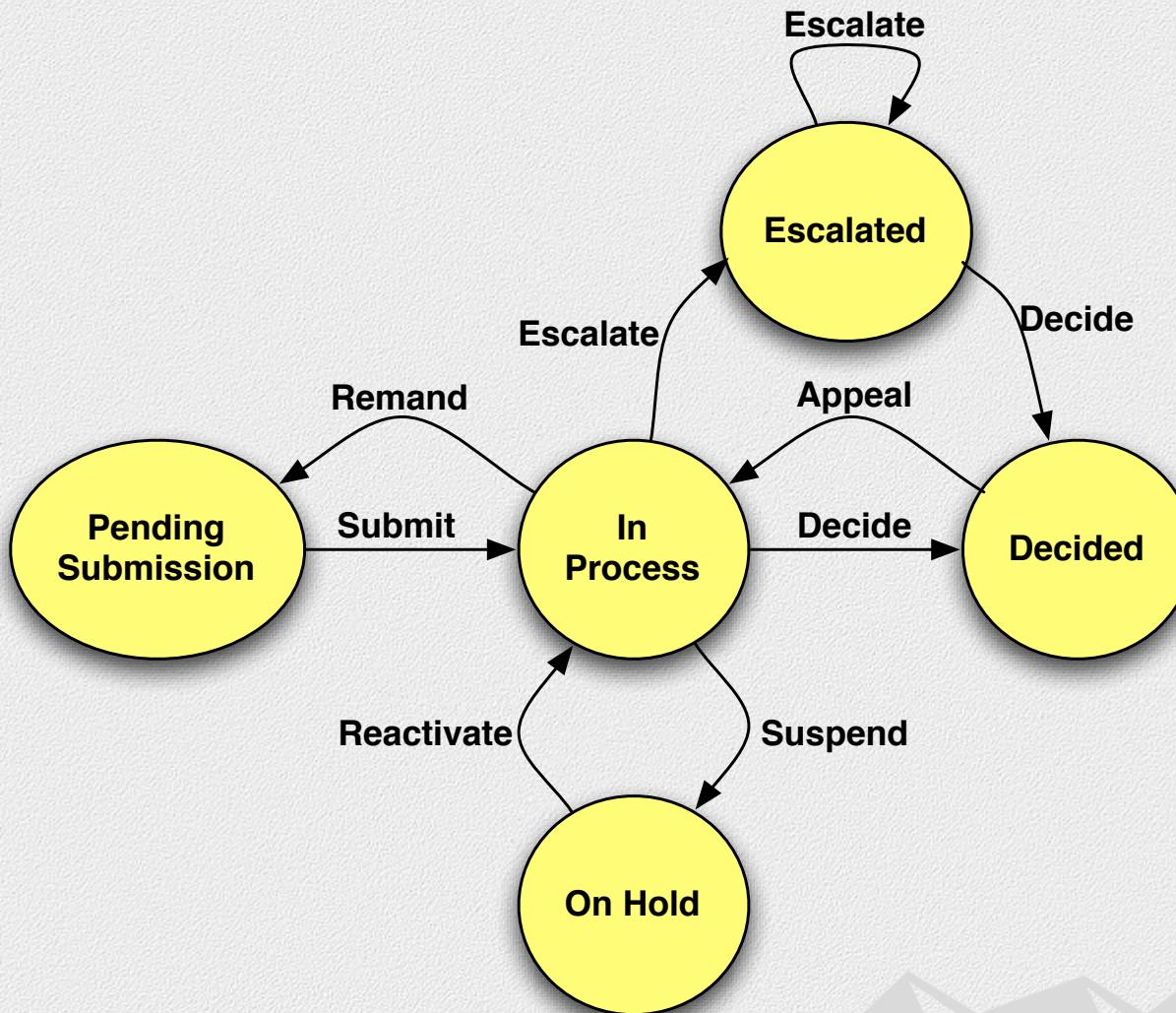
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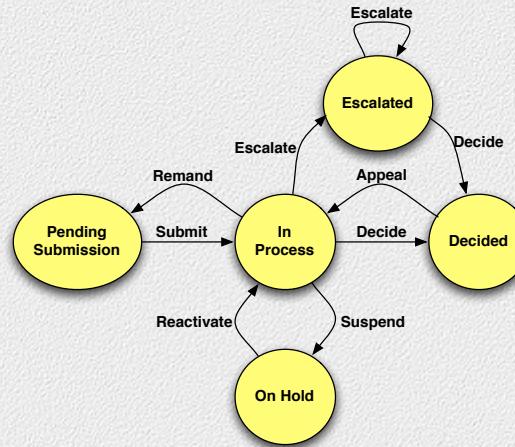
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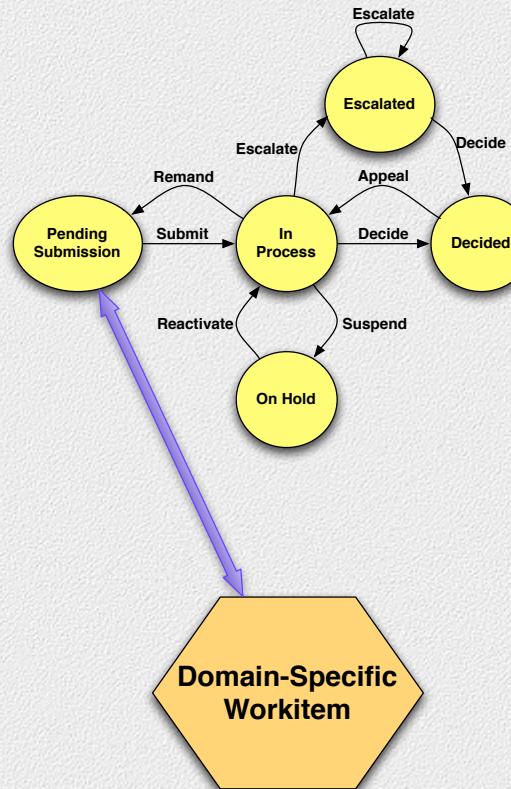
State-Based Workflow



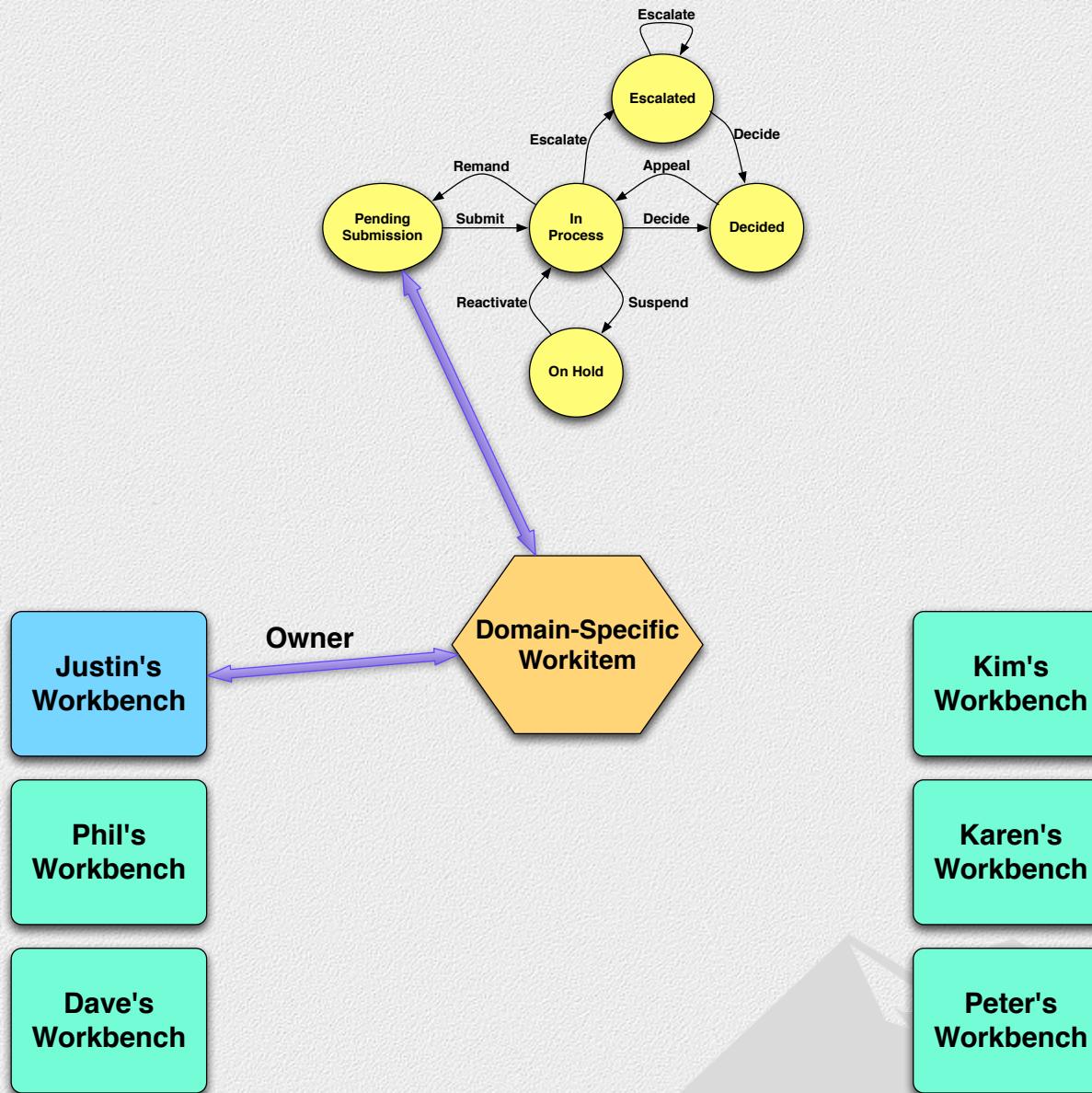
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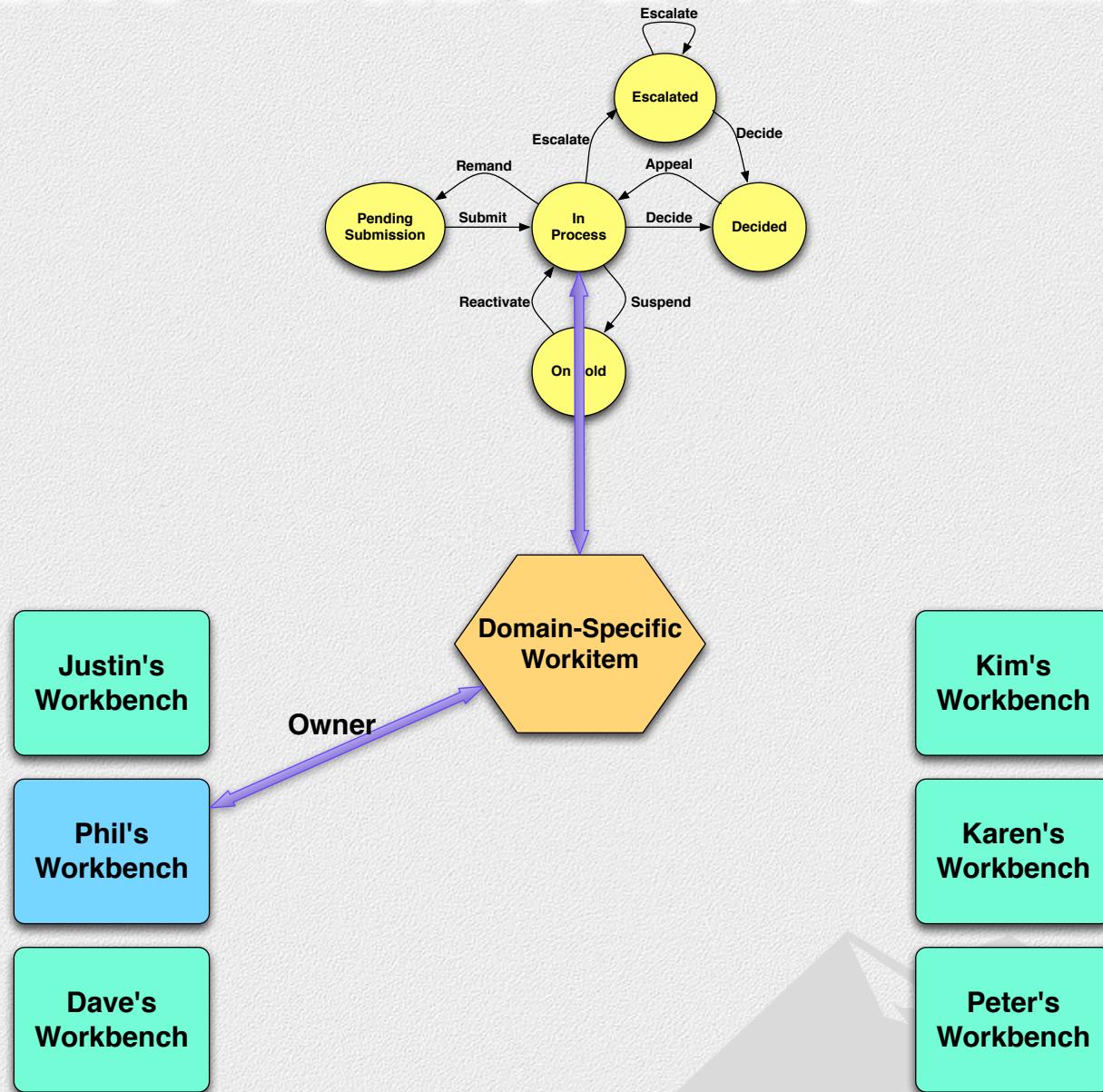
State-Based Workflow



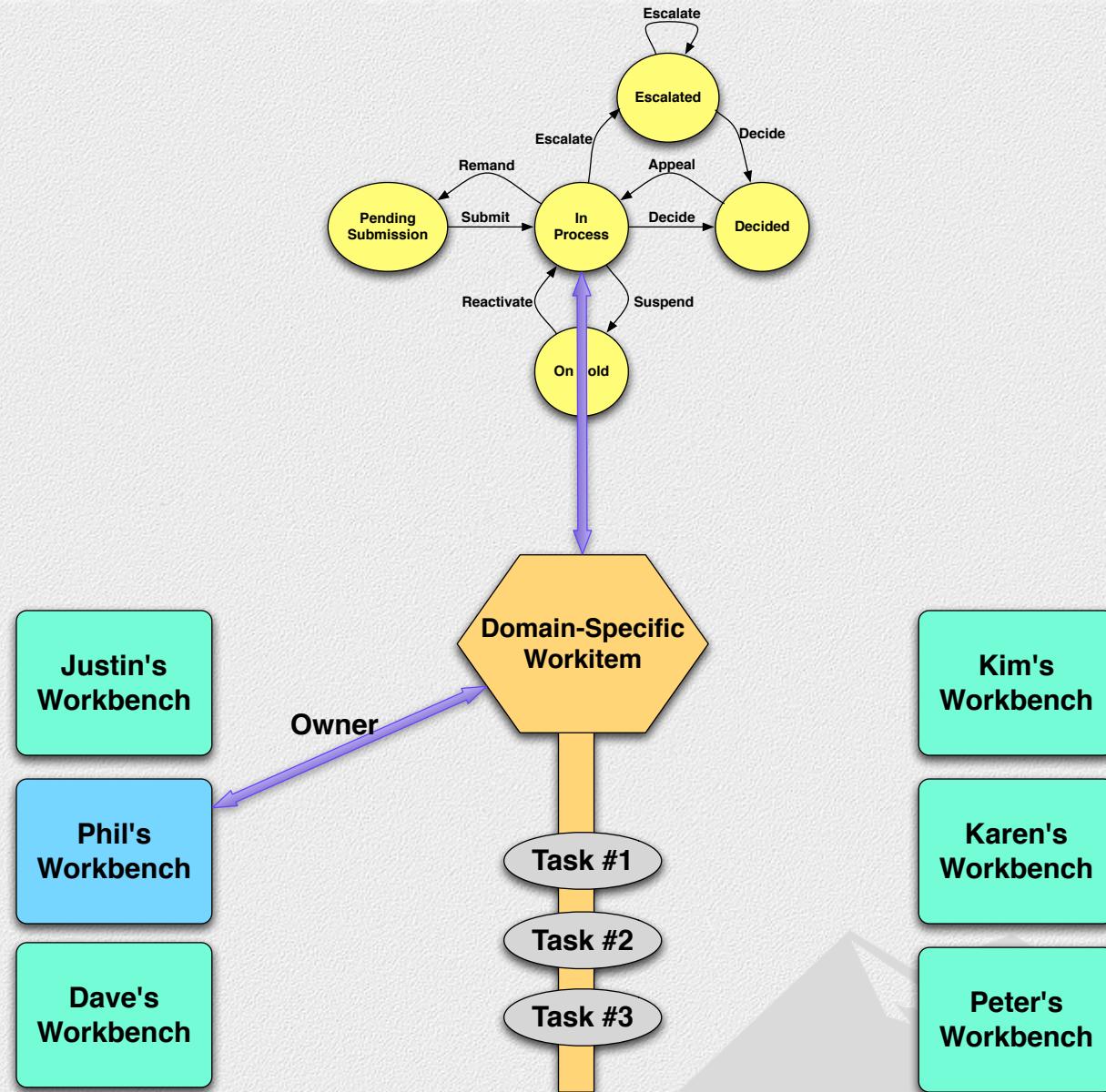
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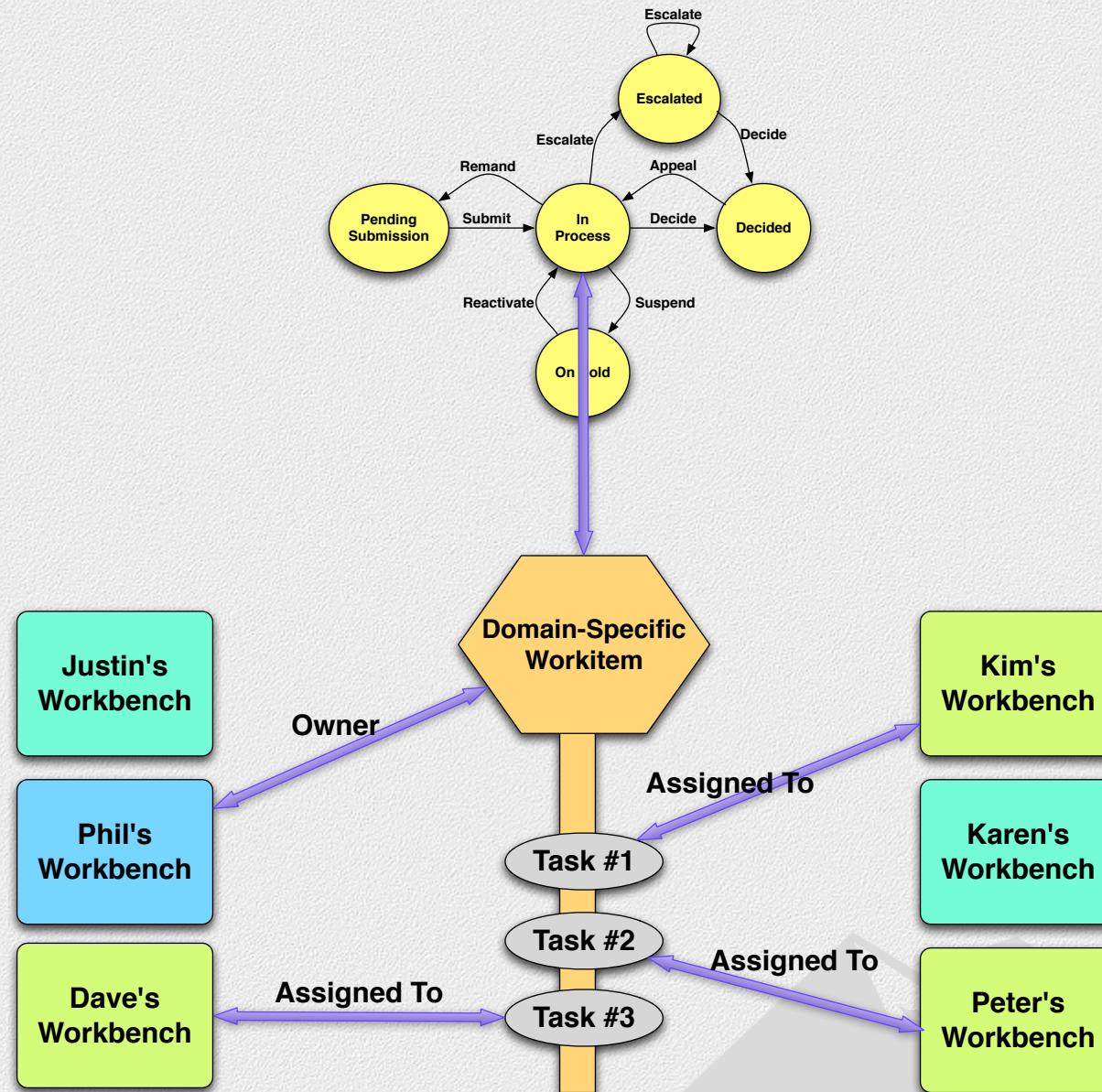
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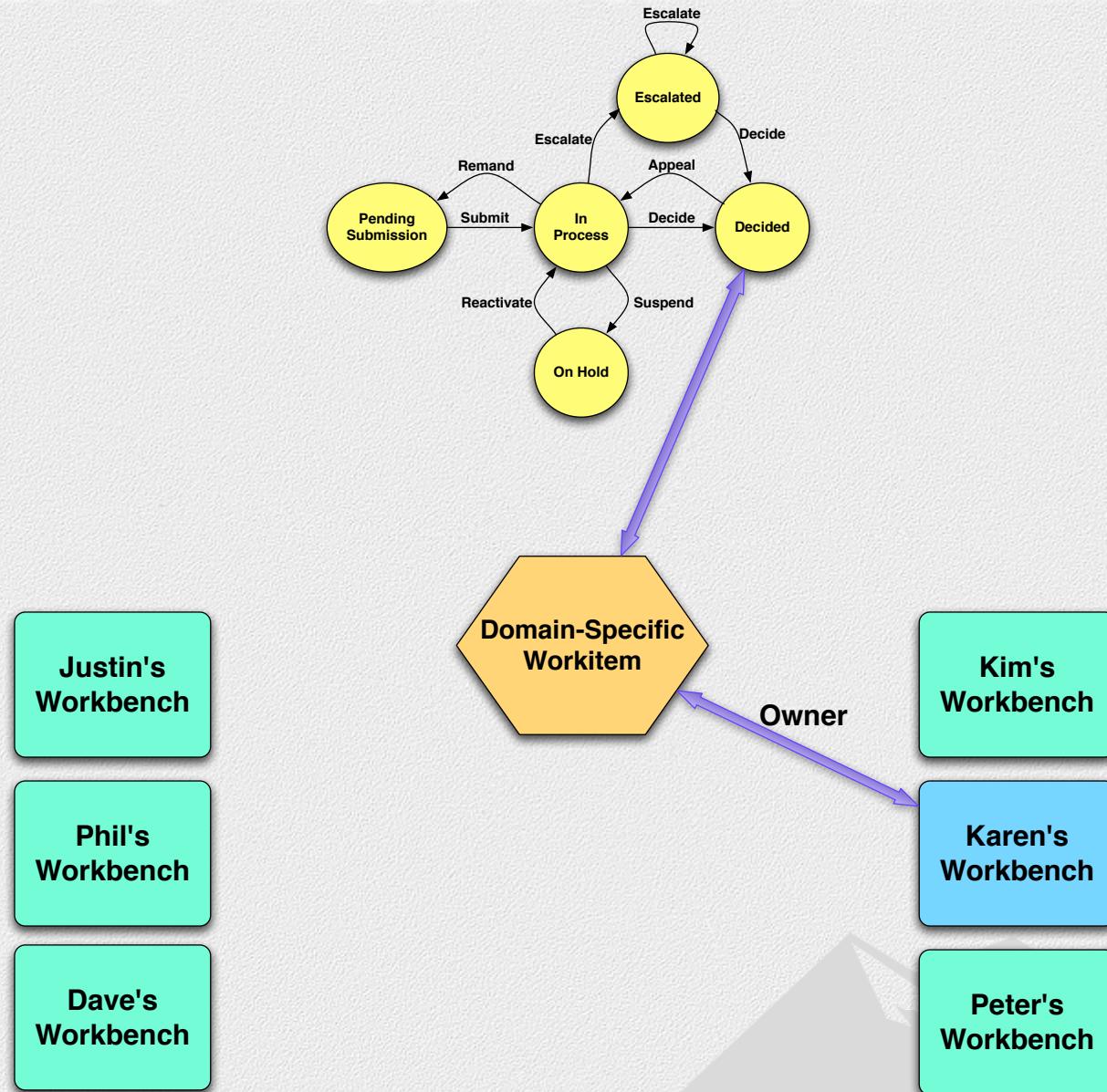
State-Based Workflow



State-Based Workflow



State-Based Workflow



State-Based Workflow



State-Based Workflow



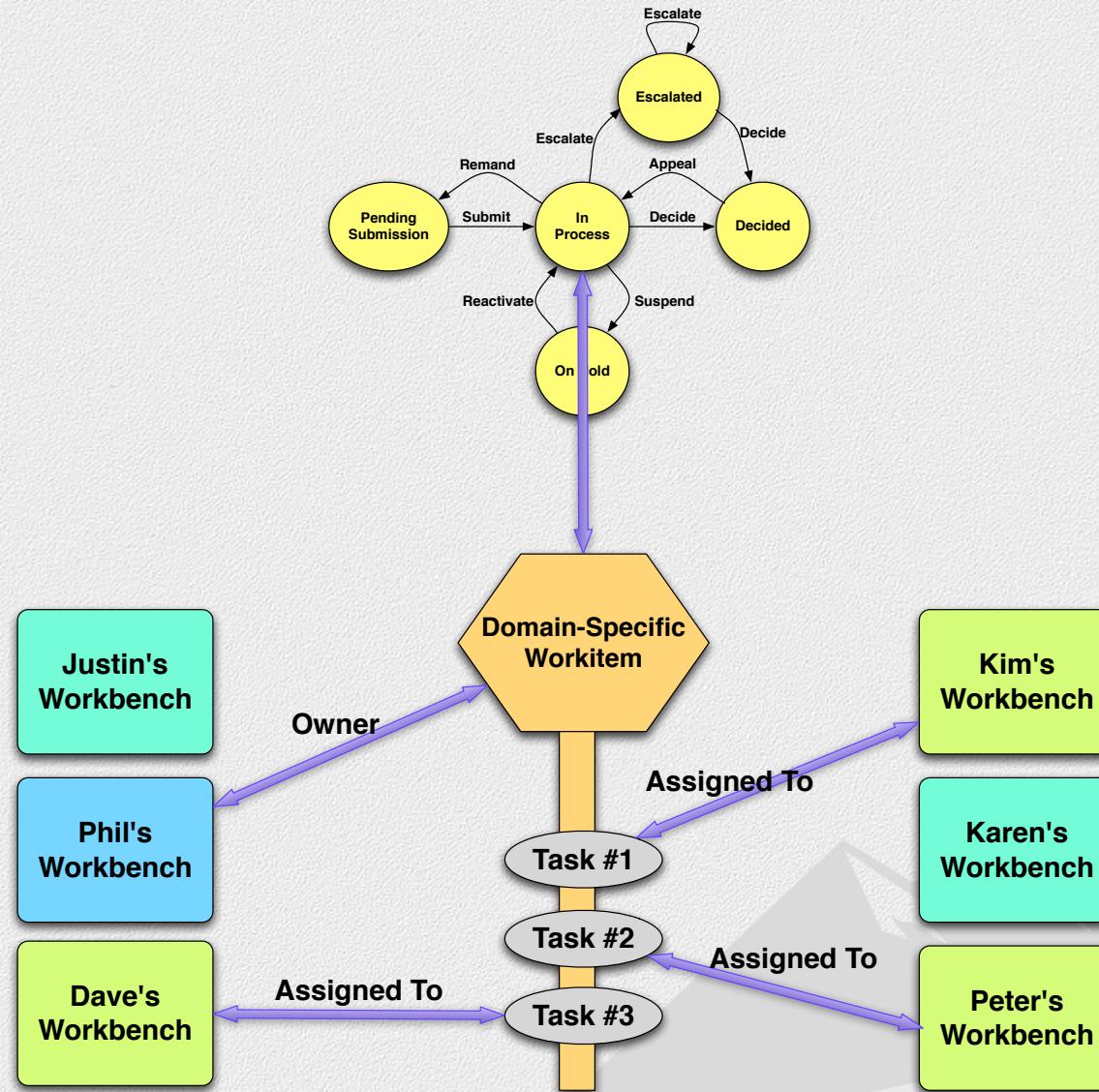
State-Based Workflow

Transition	On Entry	Owner
State		
Sequence	Task	Concurrency
WorkBench	WorkGraph	Assignment
Event	Workflow	Assignee
Transition Guard		Exit Guard
Permissions		
Visibility	On Exit	

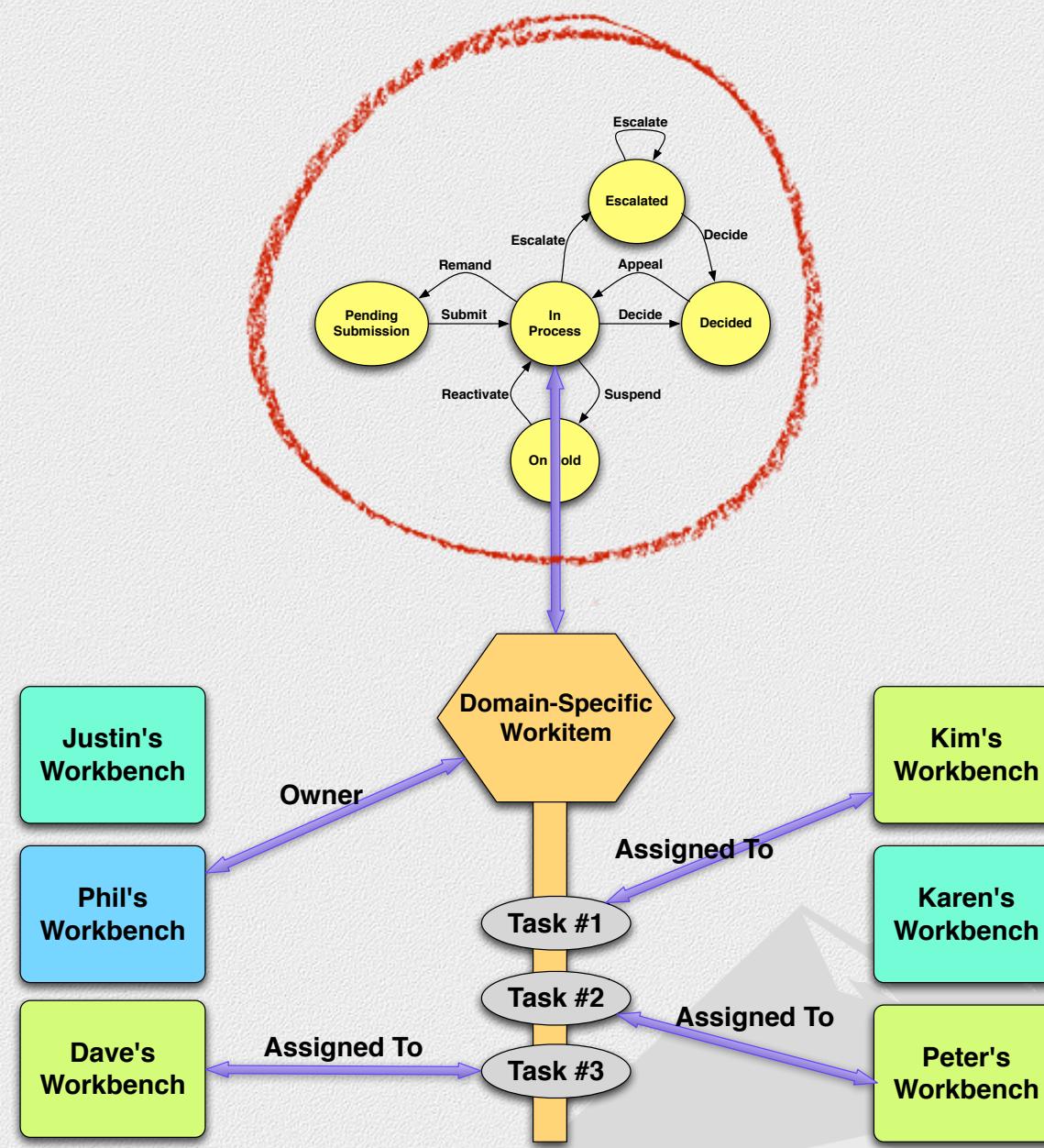
State-Based Workflow



State-Based Workflow

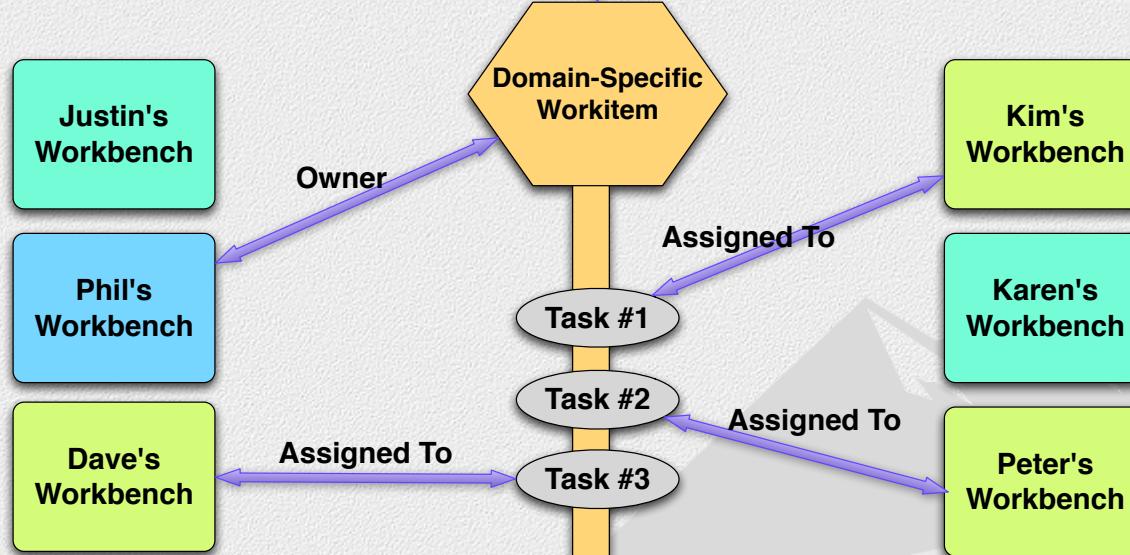
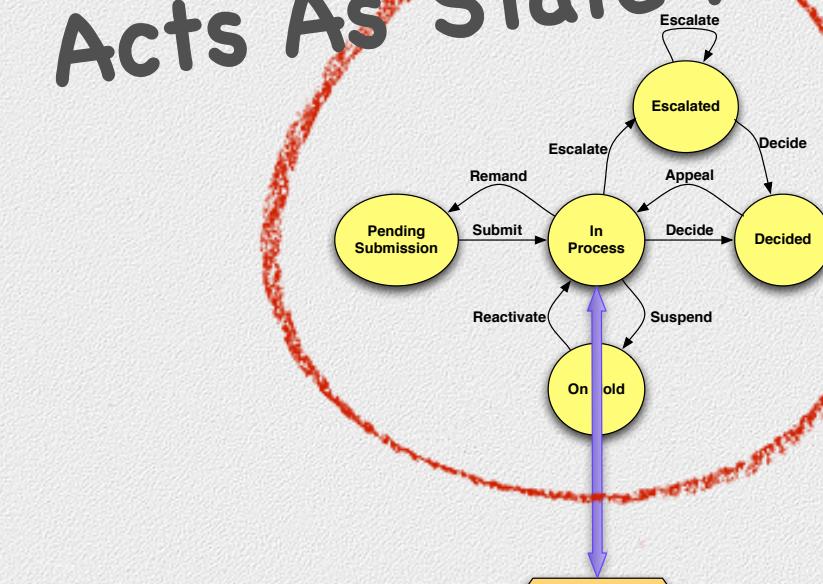


State-Based Workflow

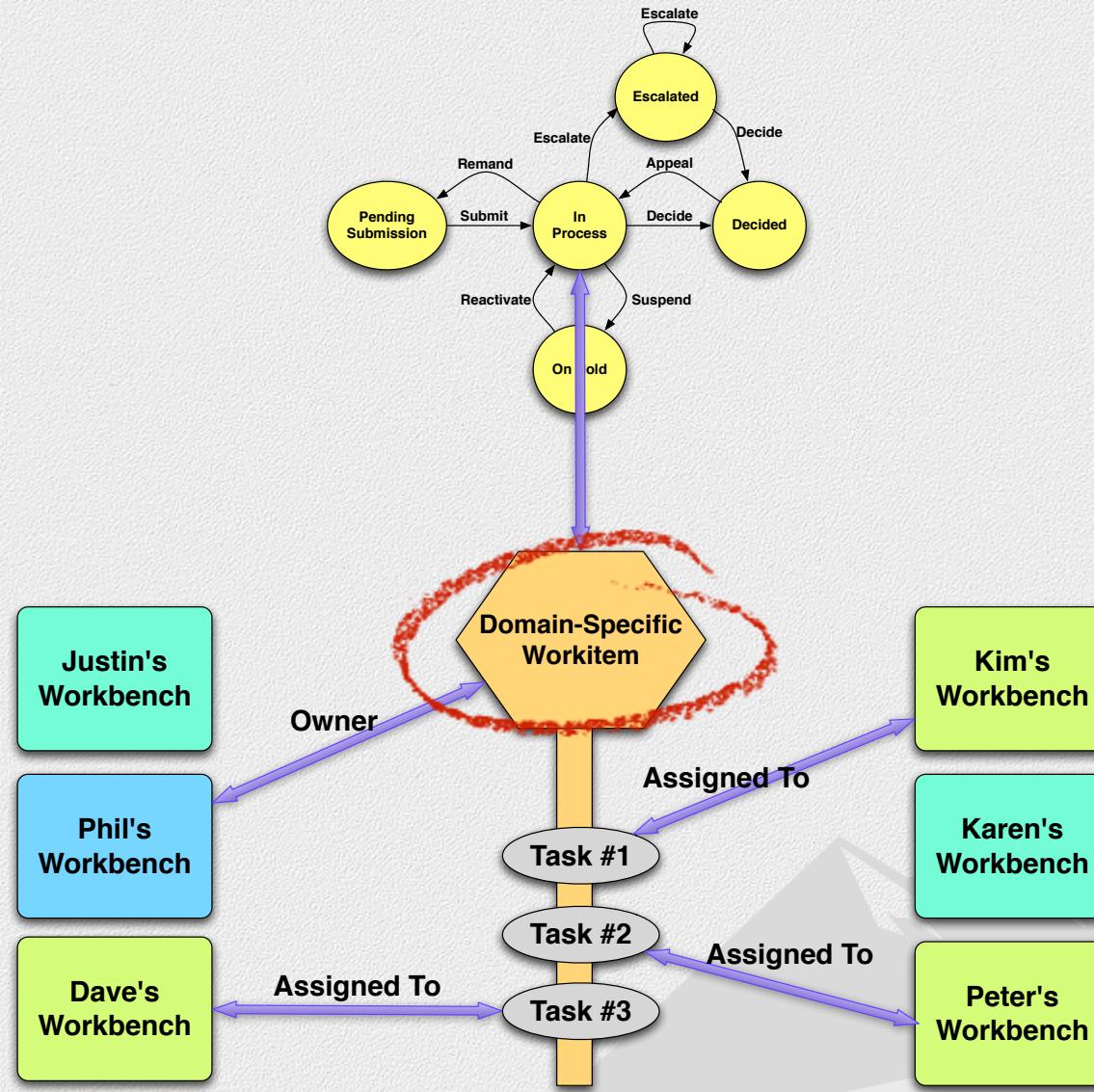


State-Based Workflow

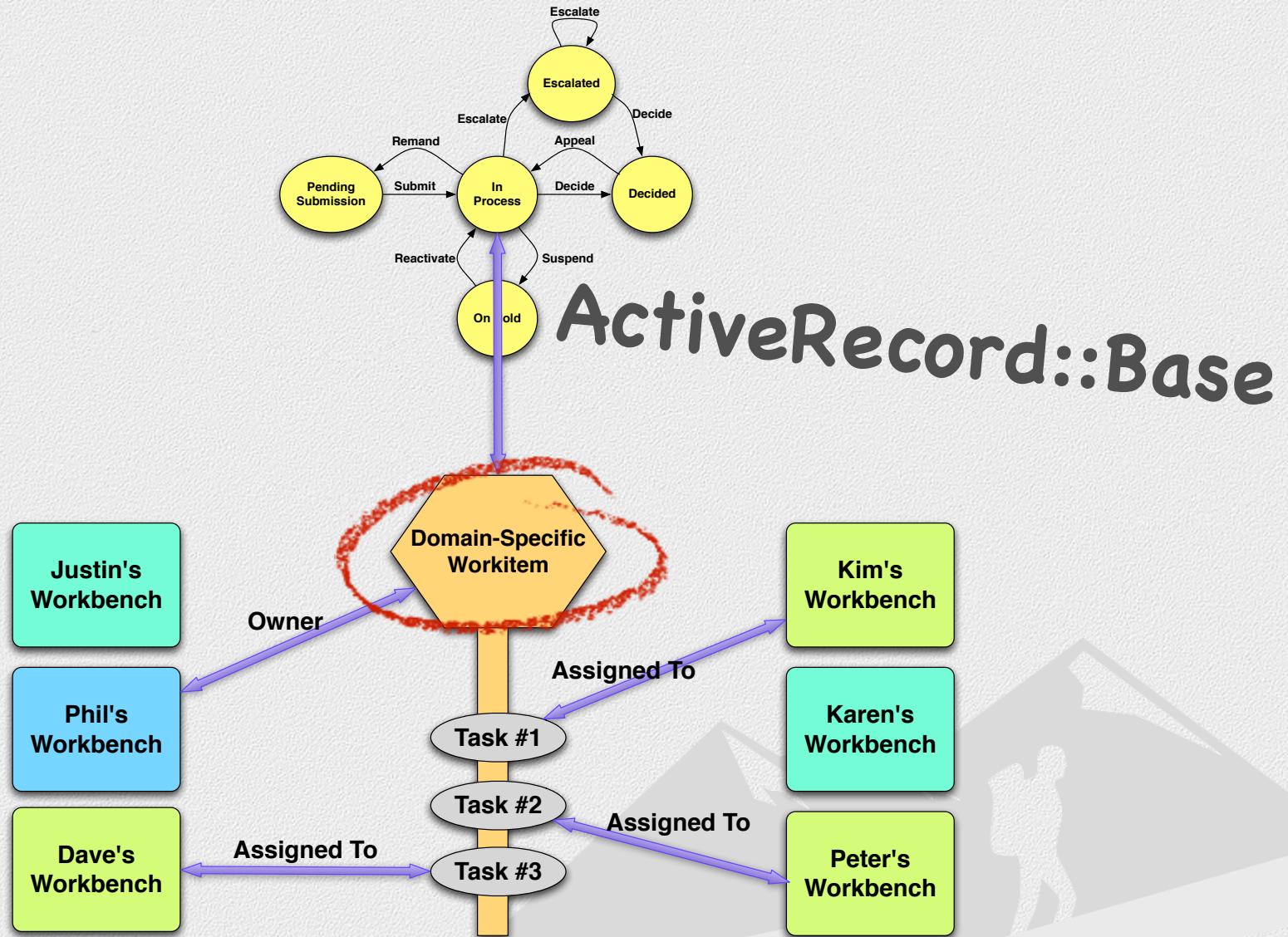
Acts As State Machine



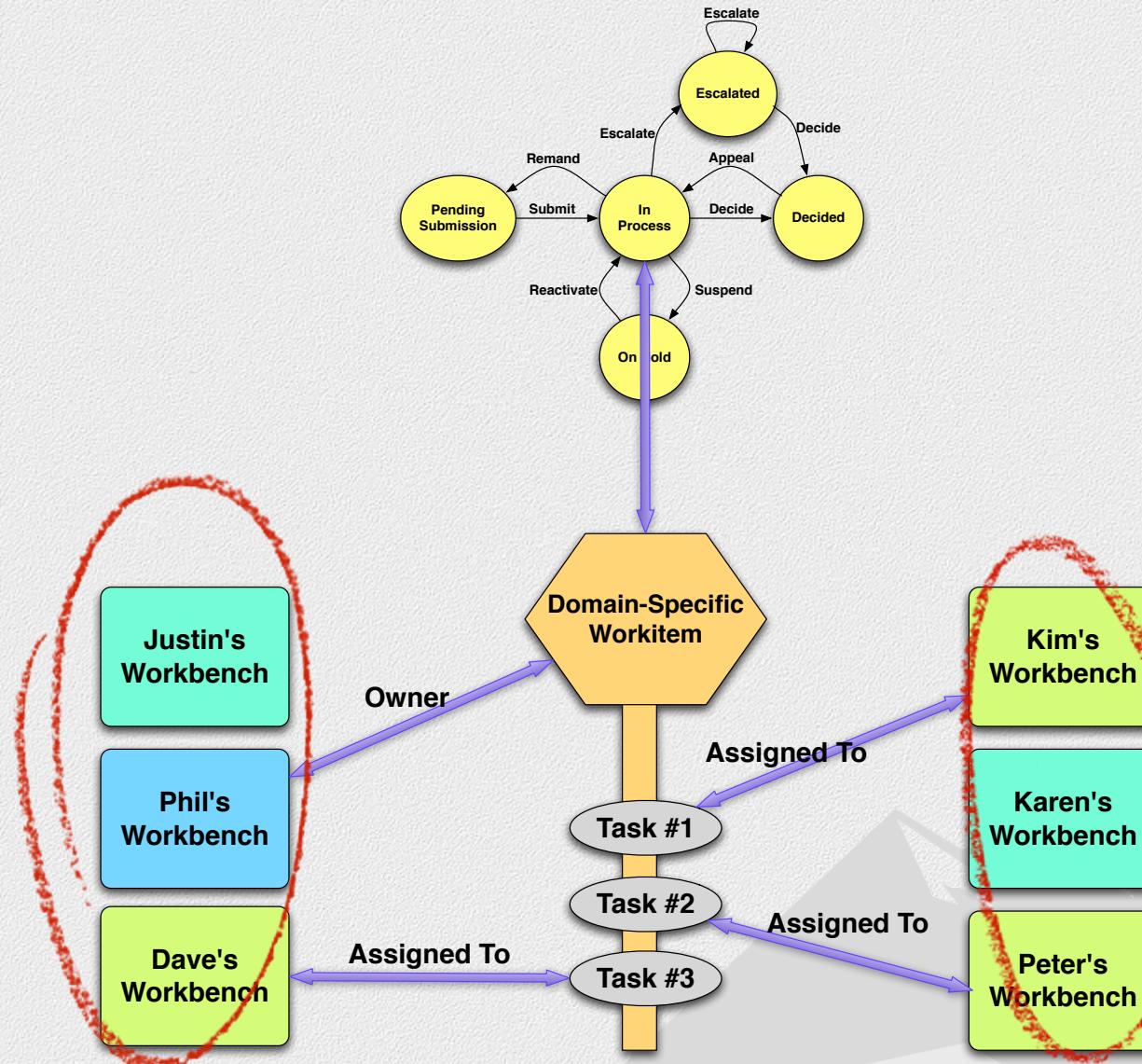
State-Based Workflow



State-Based Workflow

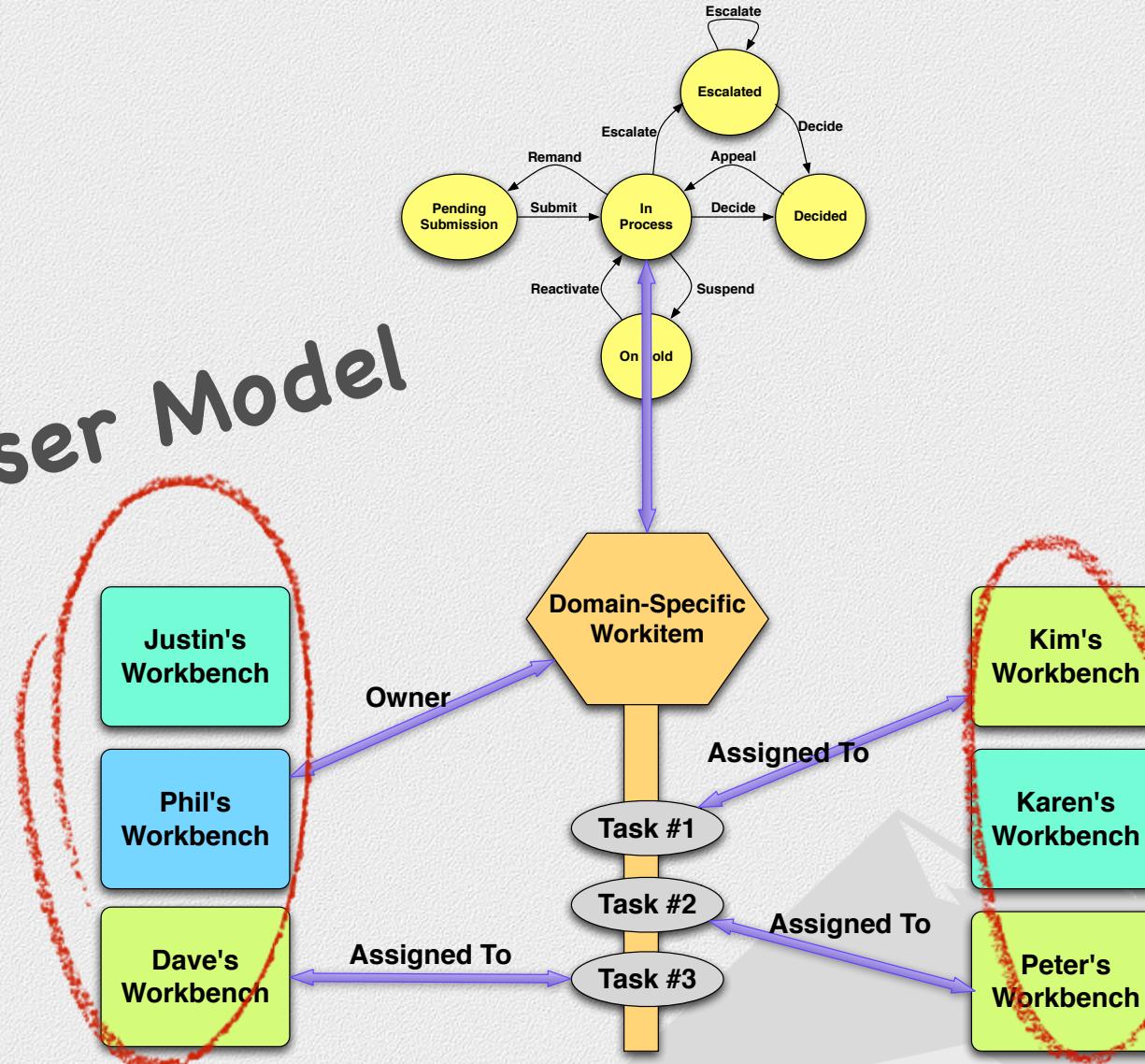


State-Based Workflow

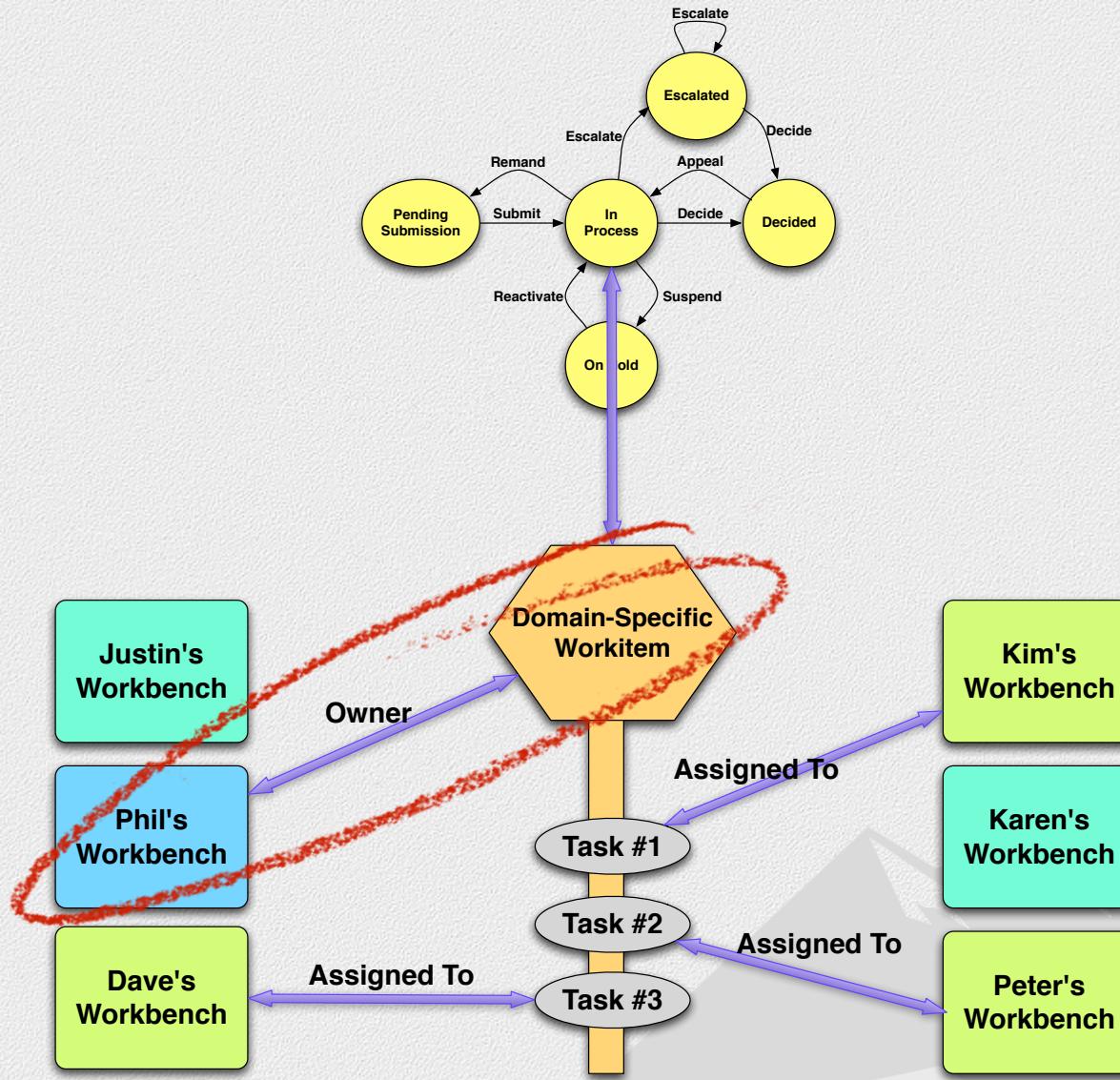


State-Based Workflow

Your User Model

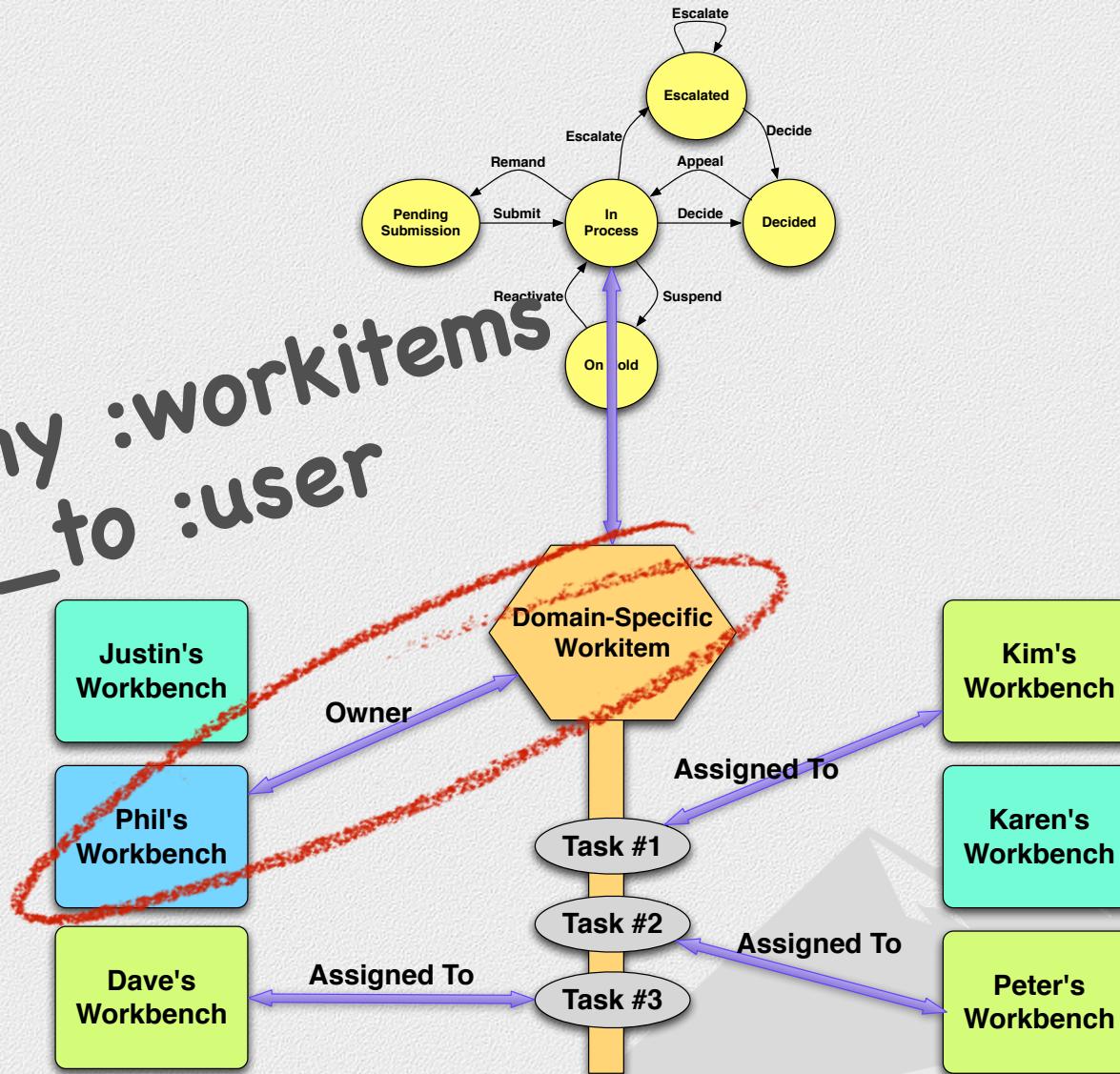


State-Based Workflow

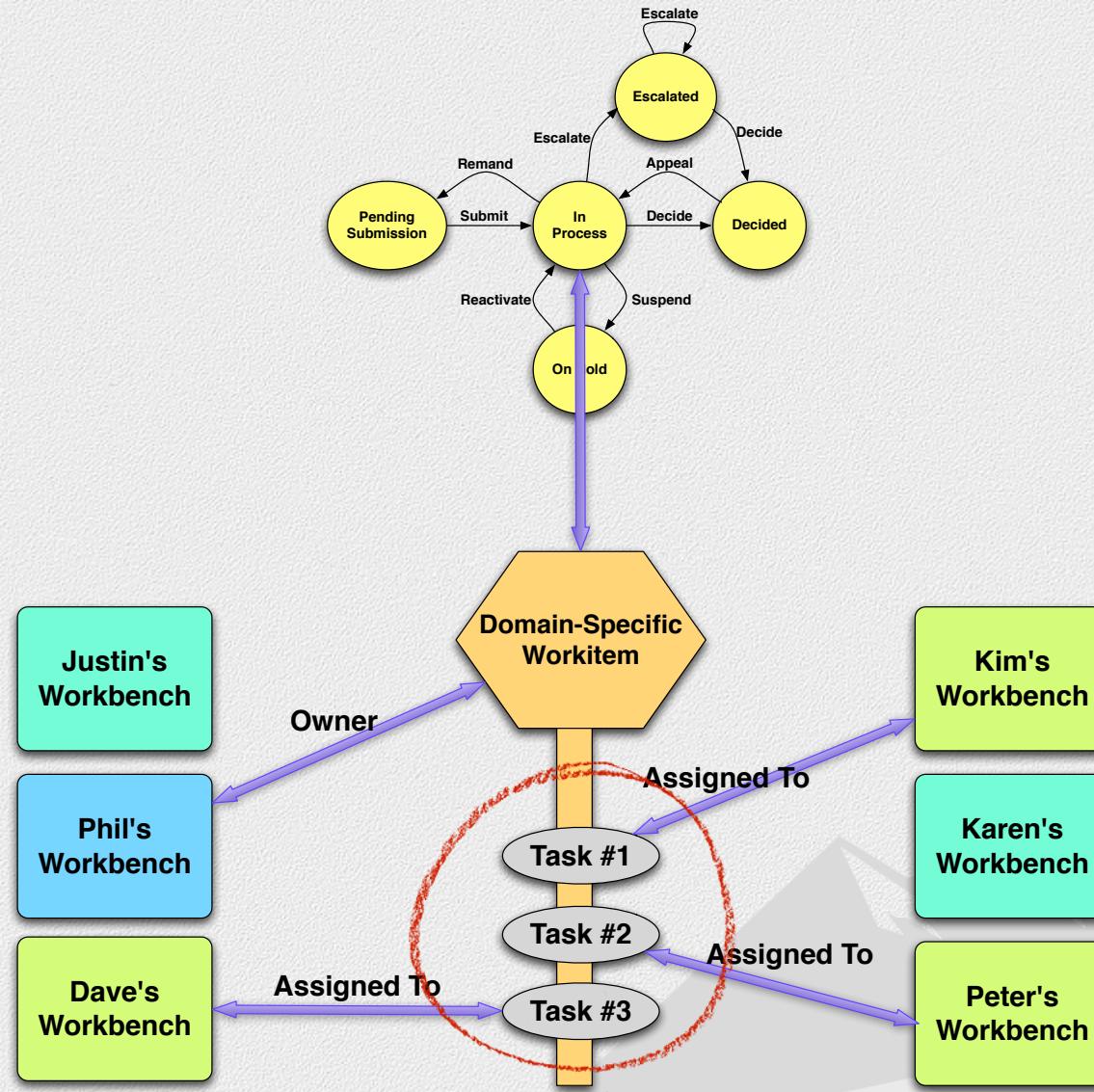


State-Based Workflow

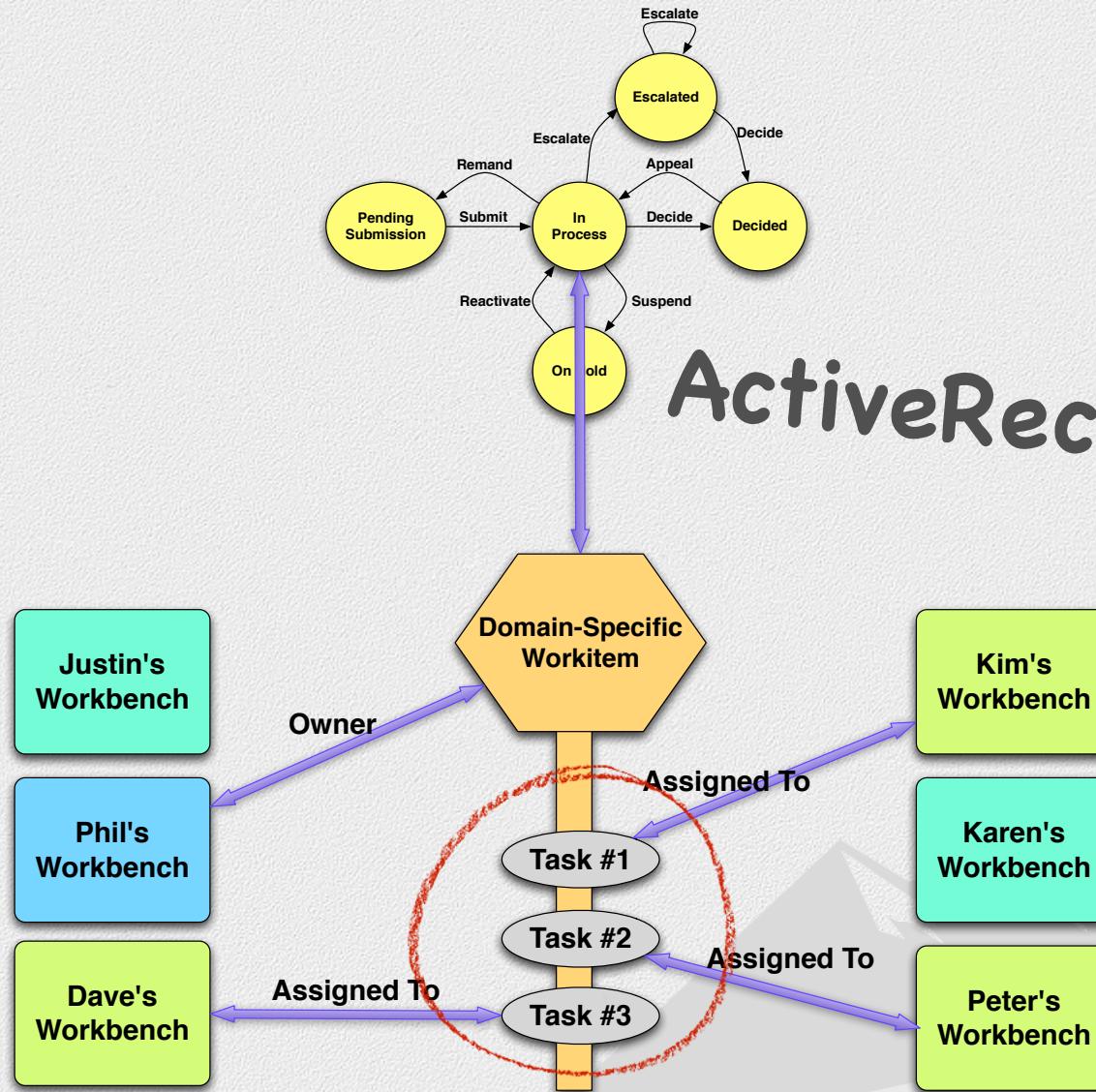
has_many :workitems
belongs_to :user



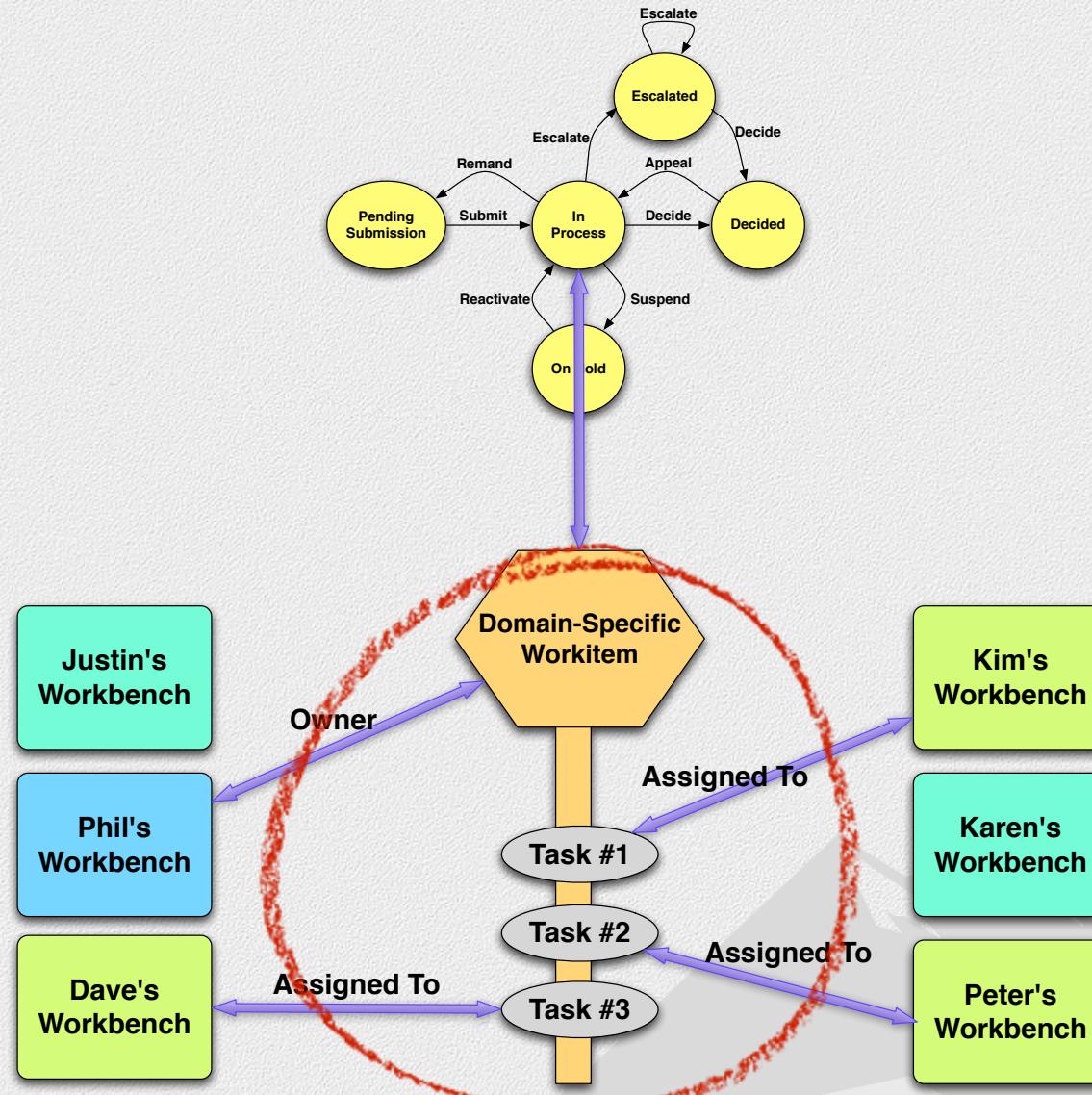
State-Based Workflow



State-Based Workflow

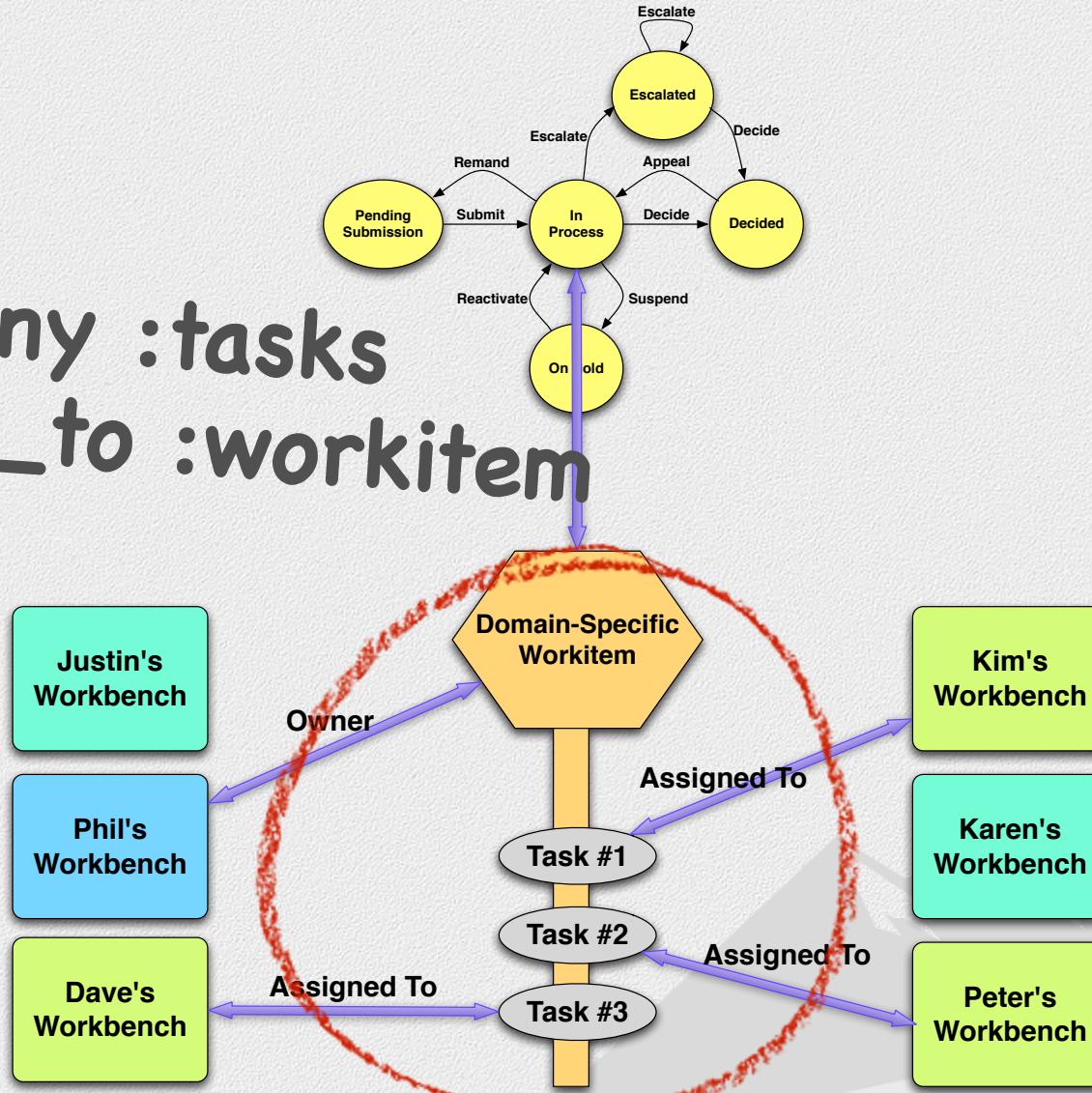


State-Based Workflow

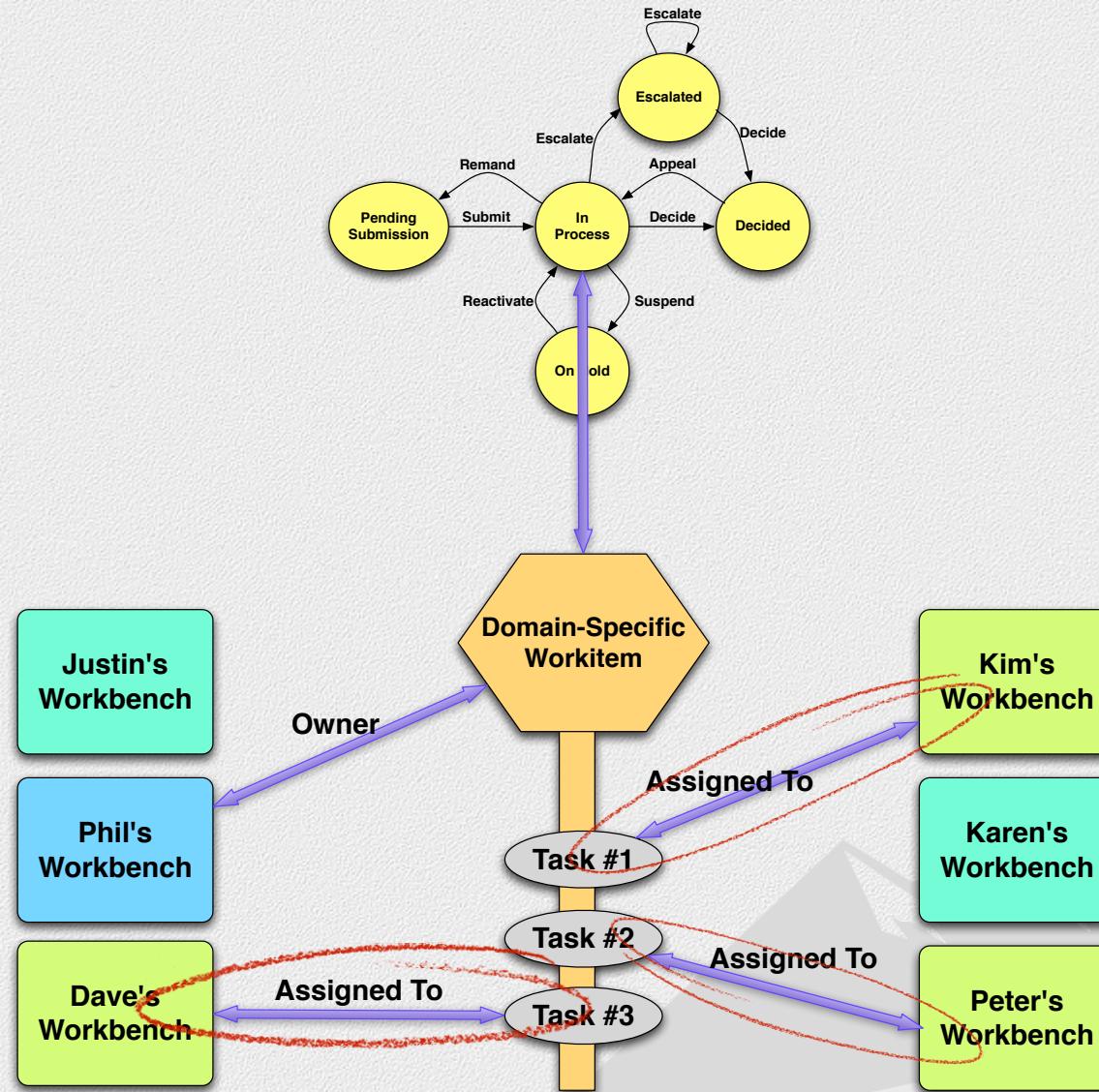


State-Based Workflow

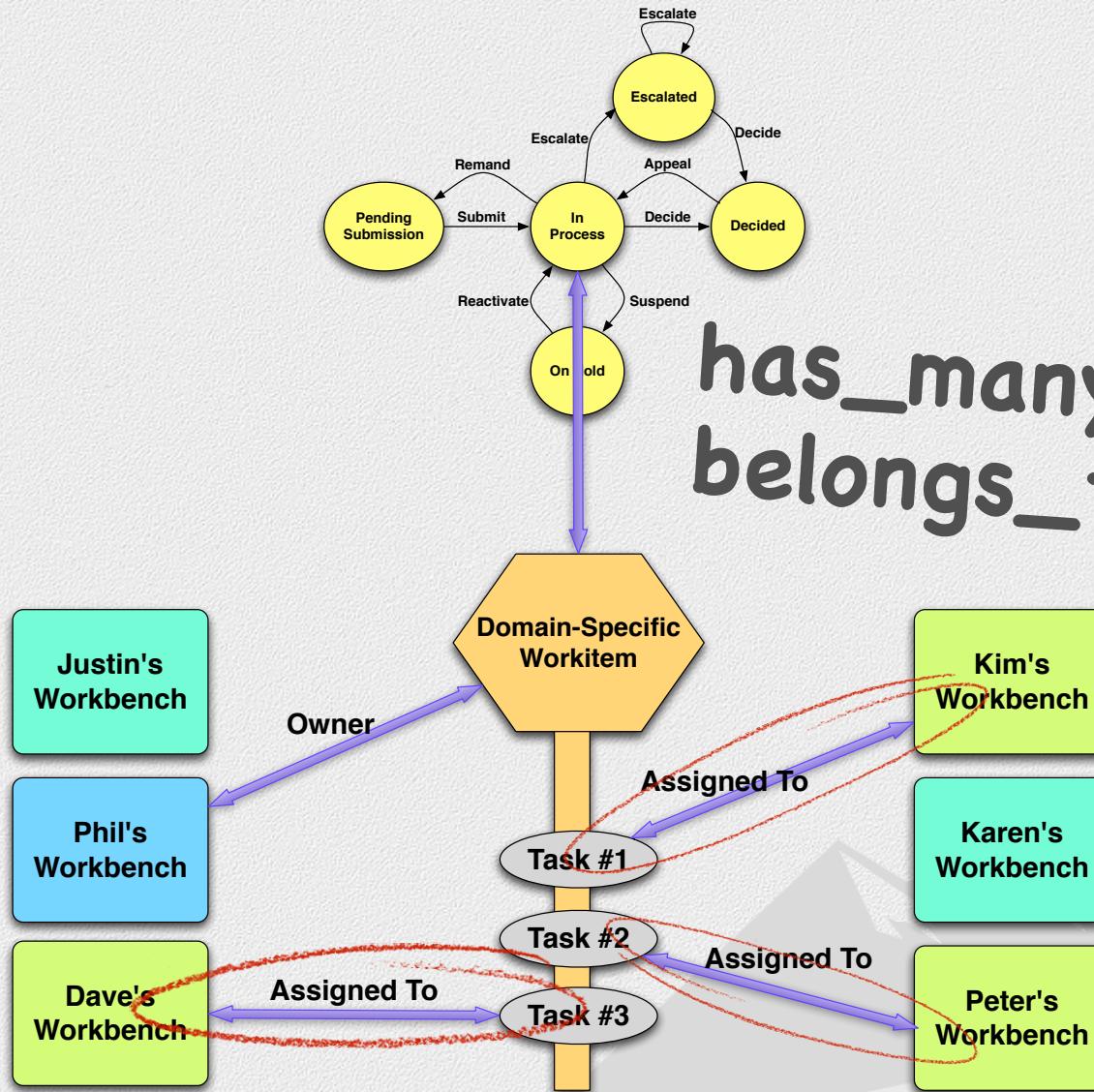
`has_many :tasks`
`belongs_to :workitem`



State-Based Workflow

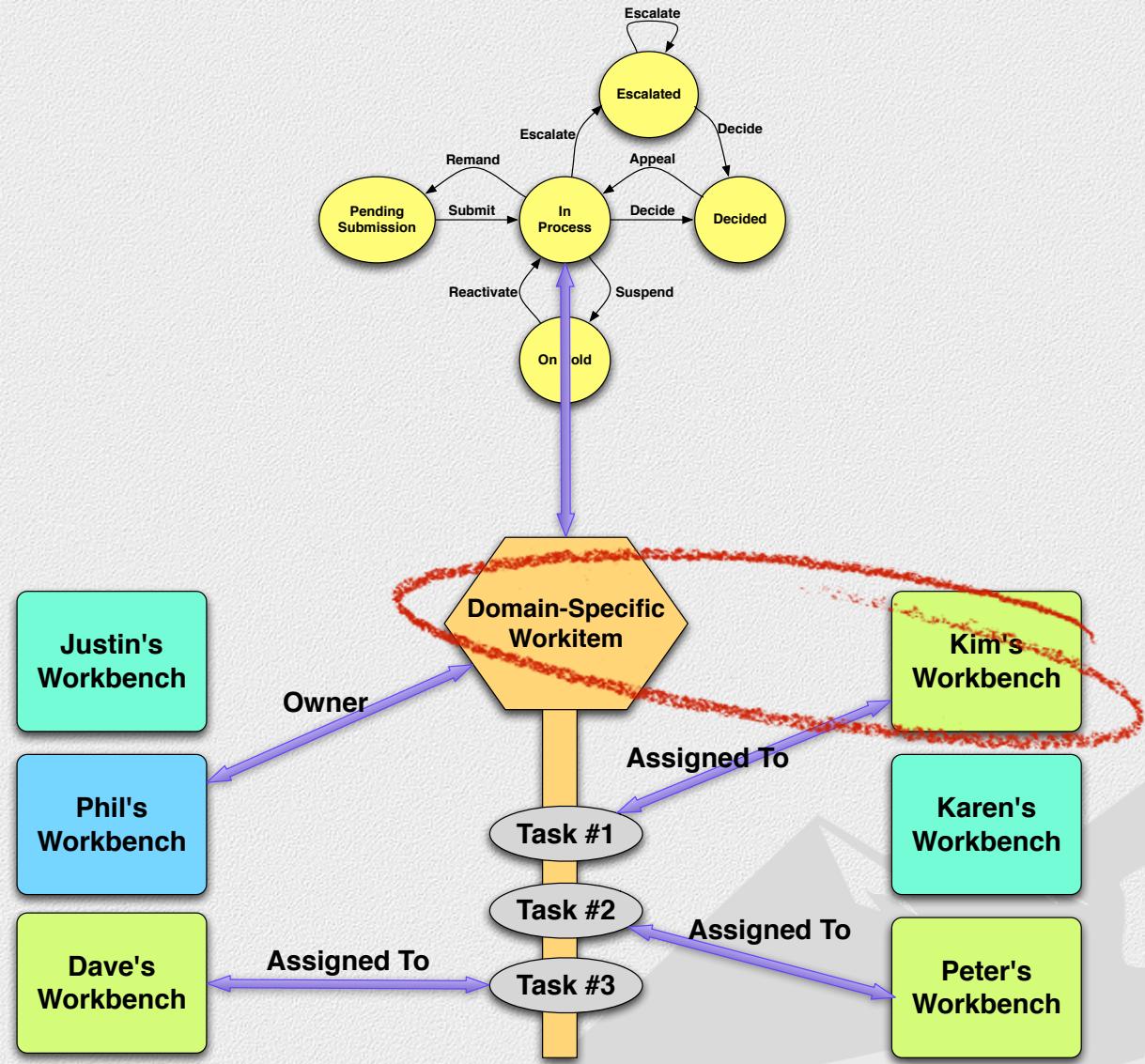


State-Based Workflow

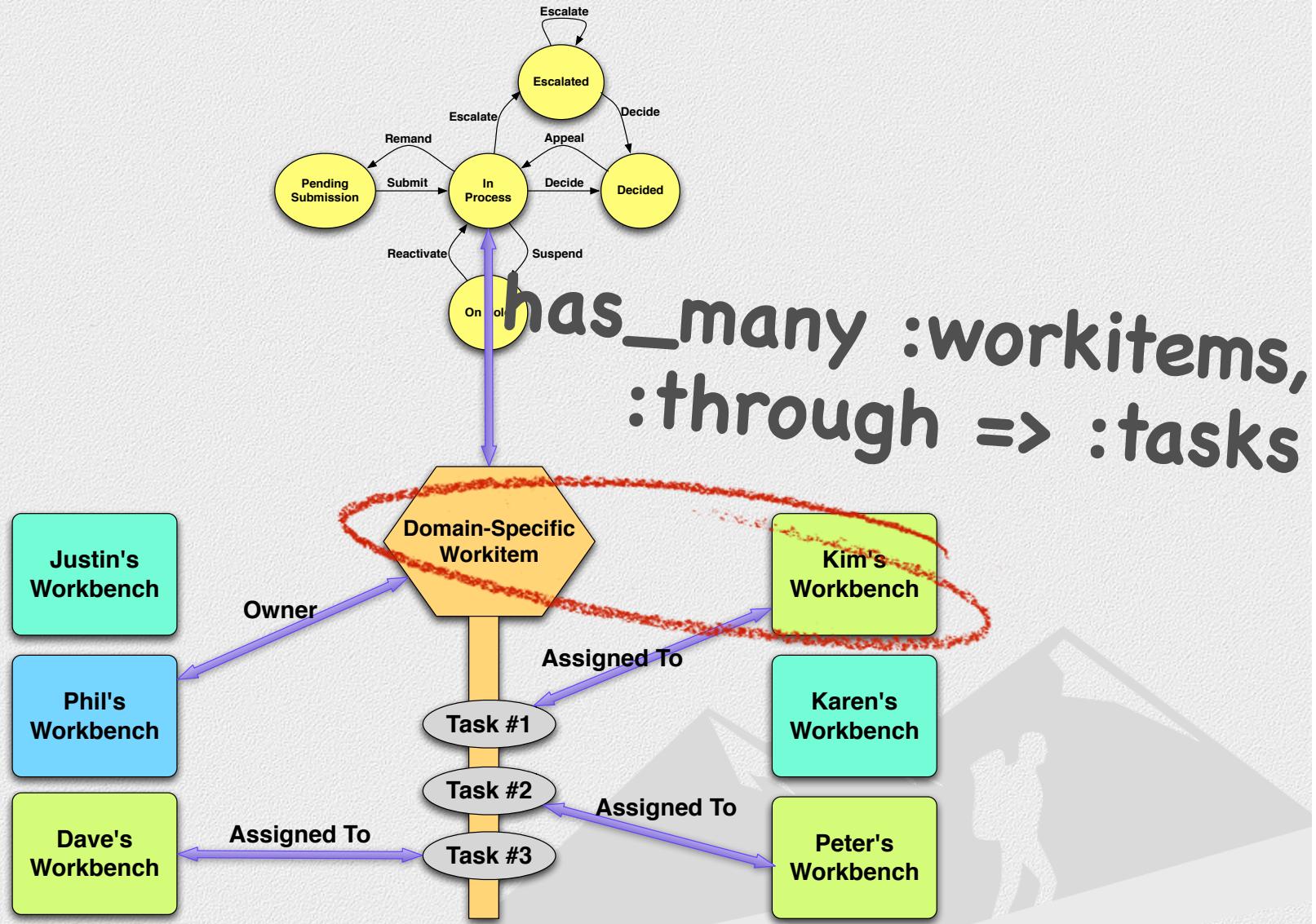


has_many :tasks
belongs_to :user

State-Based Workflow



State-Based Workflow



Show me the code!



What About Visibility?



What About Visibility?

```
workflow_permissions do |permission|
  permission.for_state :complete do |state|
    state.requires :decision

    state.access_for_role :default do |role|
      role.cannot_modify :all
      role.cannot_see :requestor
    end

    state.access_for_role :manager do |role|
      role.cannot_modify :approval
      role.cannot_see :requestor
    end
  end
end
```



Introducing StonePath

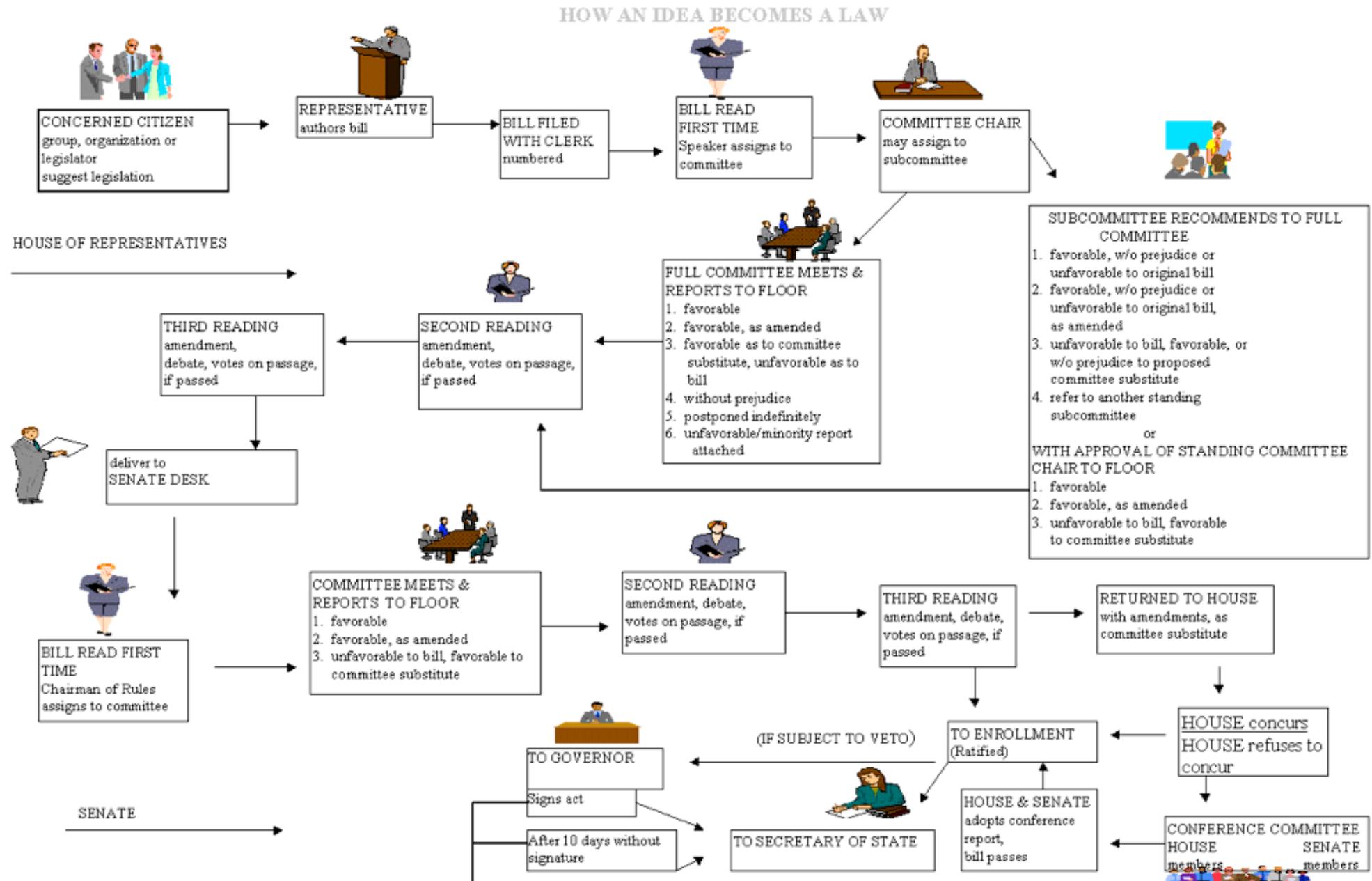
- 
- New State-Based Workflow Plugin (Gem?)
 - Extracted from real-world project(s)
 - Requires AASM Gem
 - Provides DSL and generators for Stateful Workflow concepts
 - <http://github.com/bokmann/Stone-Path>
- 

State-Based

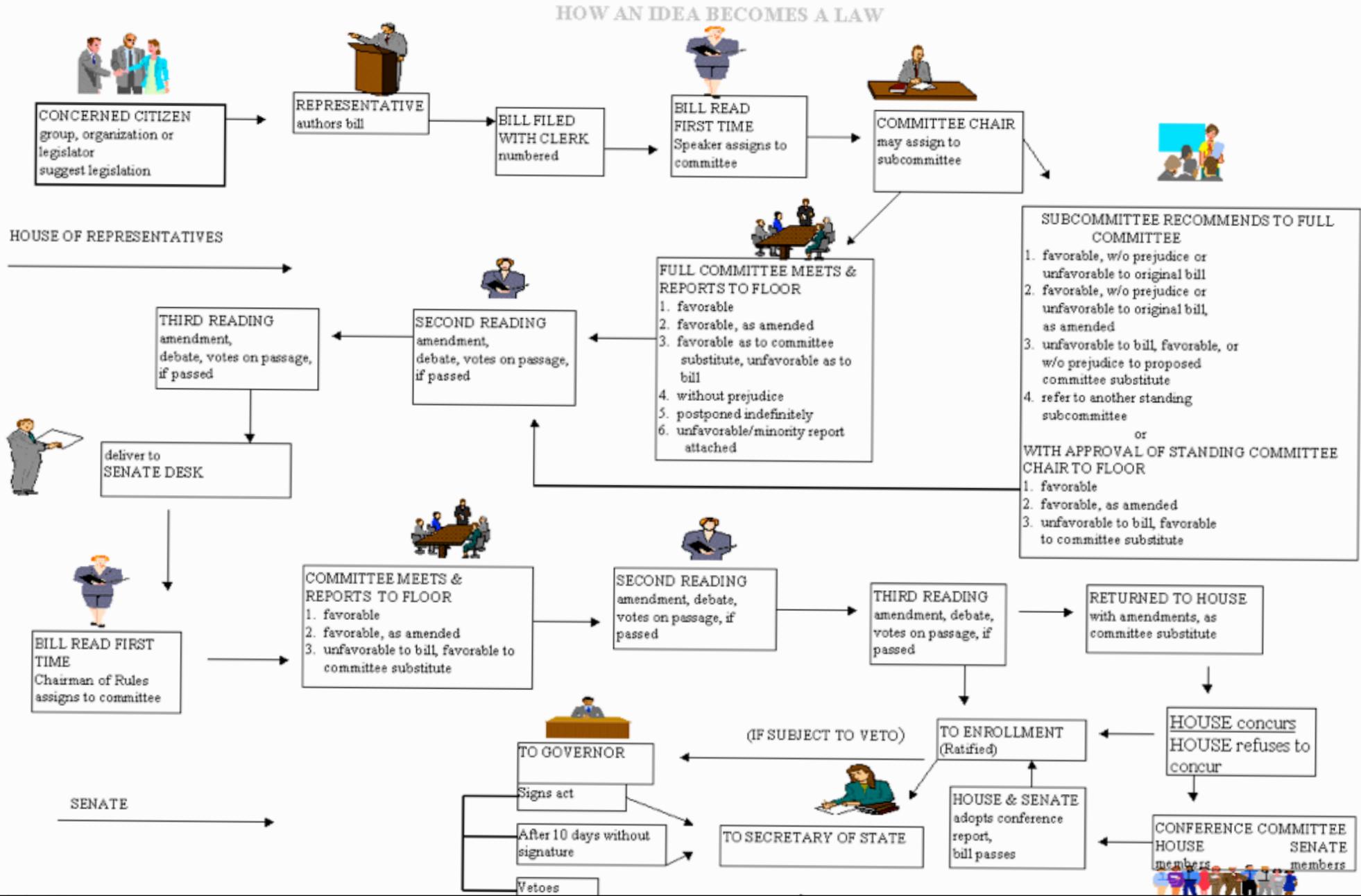
Process-Based



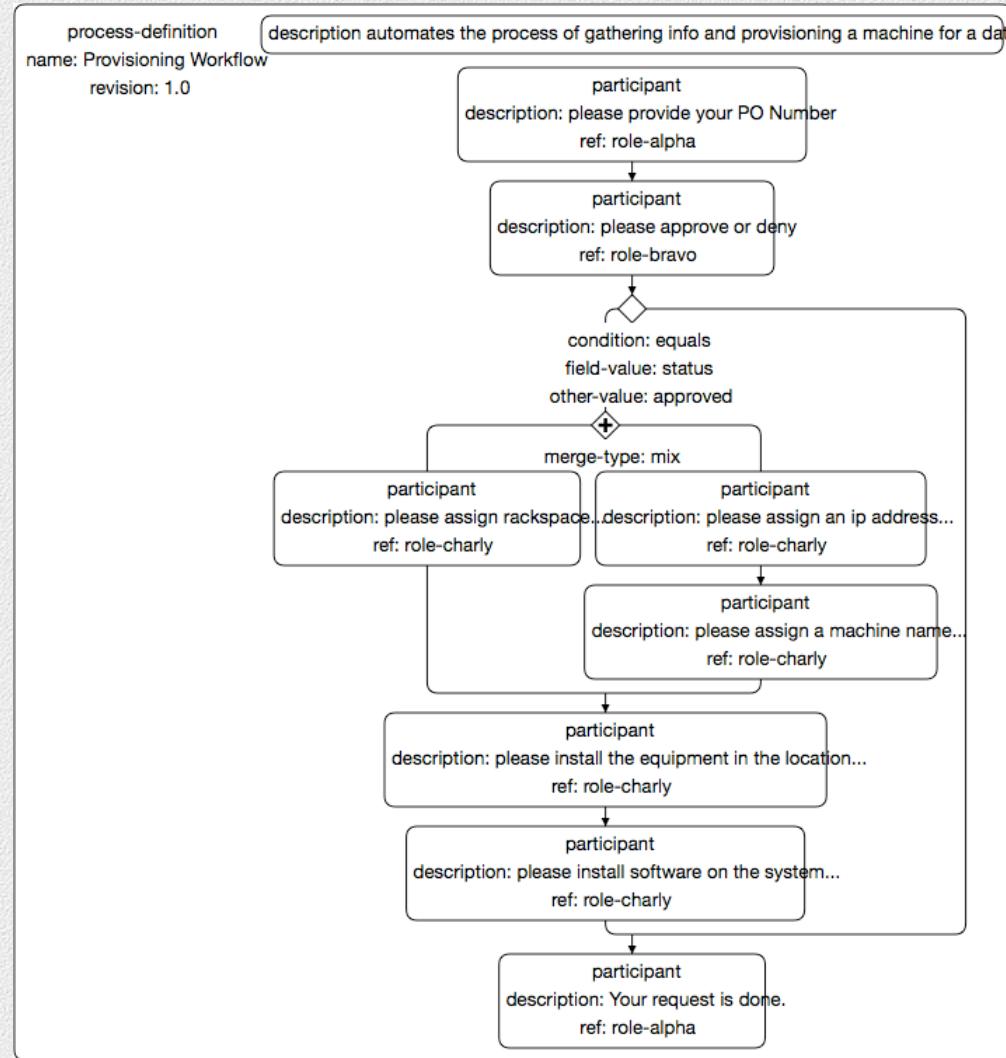
Process-Based Workflow



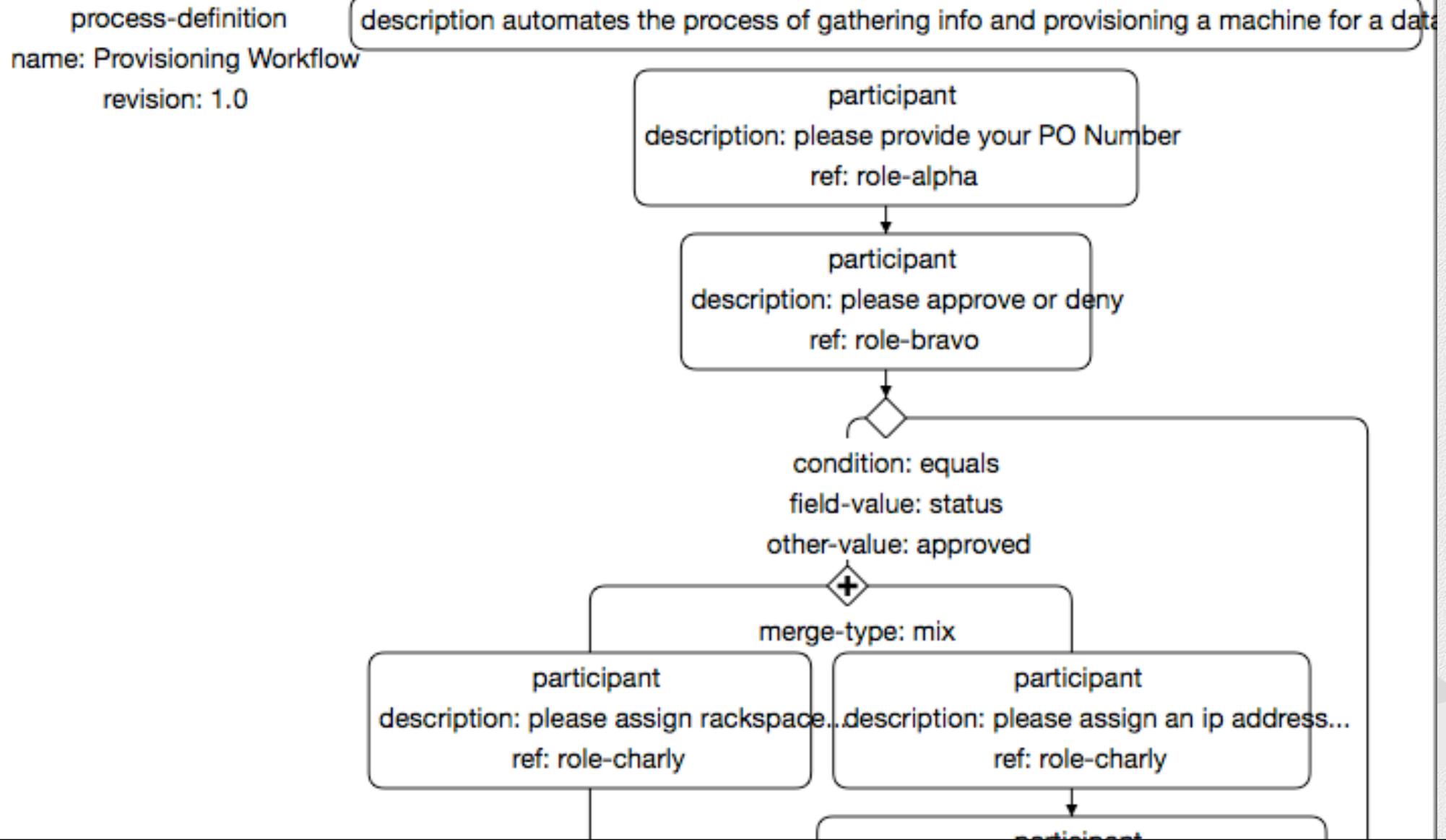
Process-Based Workflow

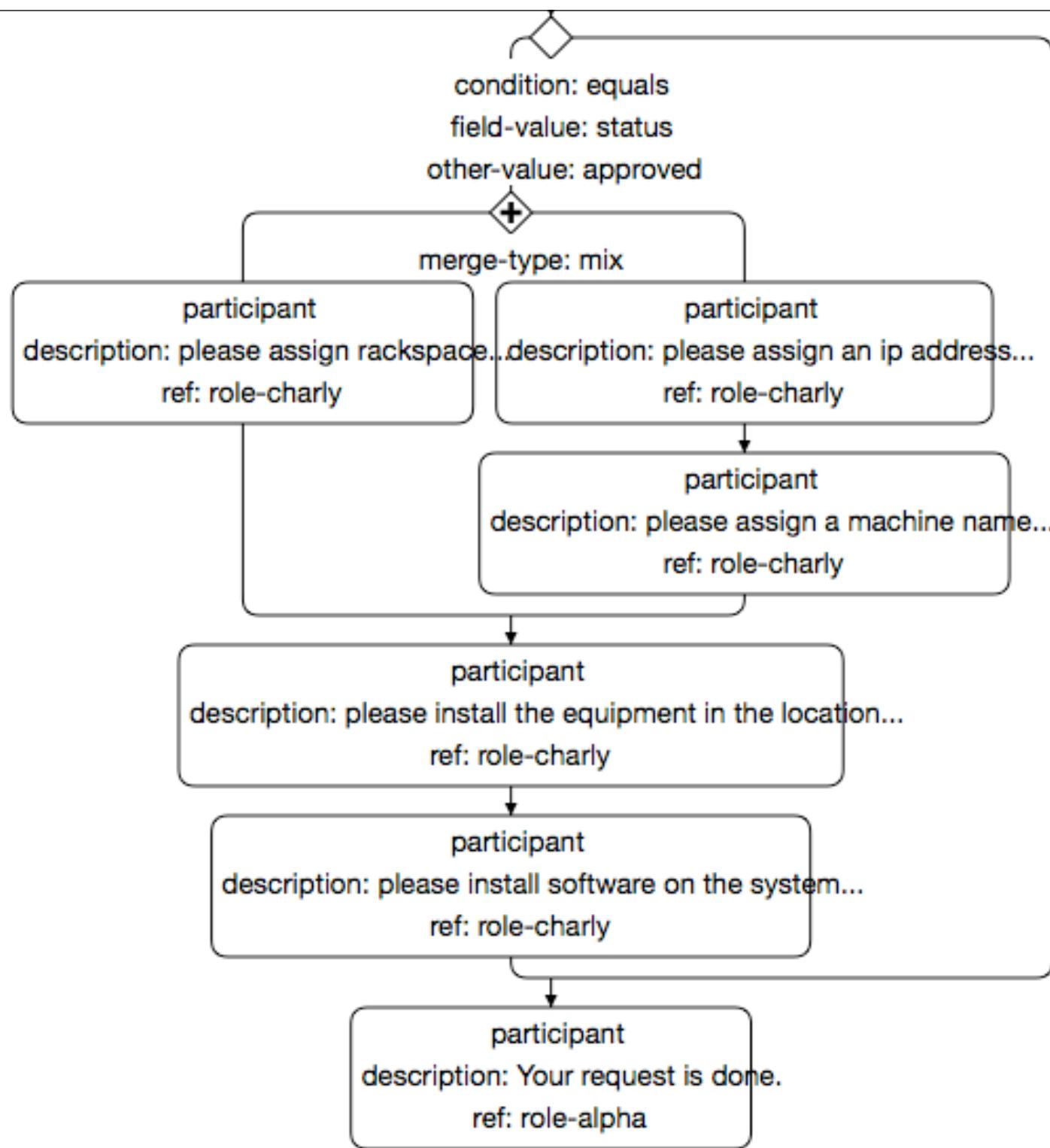


Process-Based Workflow

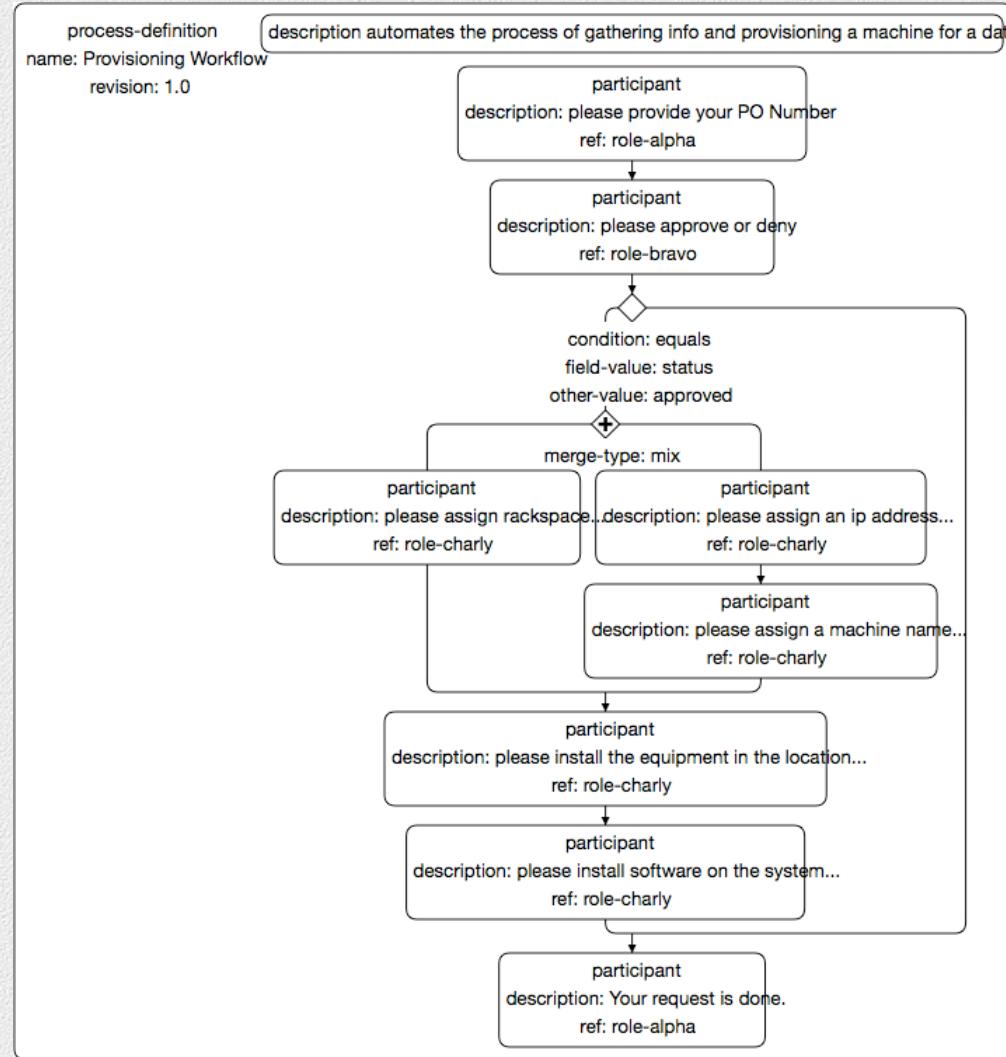


Process-Based Workflow





Process-Based Workflow



Process-Based Workflow

- Ruote (ruby gem)
 - <http://openwferu.rubyforge.org>
- Ruote-web2 (Rails example usage)
 - <http://github.com/jmettraux/ruote-web2/>
- Ruote-rest (Rack-based restful front end to Ruote)
 - <http://github.com/jmettraux/ruote-rest/tree/master>
- Ruote-Fluo (Javascript graphical workflow editor)
 - <http://github.com/jmettraux/ruote-fluo/tree/master>

Ruote-Fluo

fluo bench

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defn undo as xml as ruby as json show/hide minor rotate

```

process-definition "name": "MyProcess", "revision": "0"
  set-fields "value": {"customer": "Toto", "dimension": {"height": 4, "width": 5}}
  sequence
    participant toto0
    participant "ref": "toto1"
    set "v": "toto", "val": "nada"
    toto2 "if": "${f:valid} is set"
    if
      equals "field-val": "f0", "other-val": "ok"
      toto-then
      toto-else
    end
    if
      equals "field-val": "f0", "other-val": "ok"
      sequence
        toto-then-0
        toto-then-1
      end
    end
    if "test": "${f0} == ok"
      toto-then
    end
    concurrence
      sequence
        participant toto4
        subprocess sub0
      end
      participant 佐々木さん
      sequence
        sub0
        participant "ref": "toto6"
      end
    end
    toto8
  end
  process-definition "name": "sub0"
    participant toto3
  end
end

```

process-definition
name: MyProcess
revision: 0

Show me the code!



Ruote

Ruote-Web2

Ruote-Rest

State vs. Process

- **If your users are novices -**
consider Process-Based Workflow
 - Process-based makes steps-to-completion clearer
 - Options along the path are constrained

- **If your users are experts -**
consider State-Based Workflow
 - State-based allows more flexibility
 - Separates “tasks” from “task assignments”
 - makes you think more about concurrency between tasks
 - Provides more freedom for experts to operate

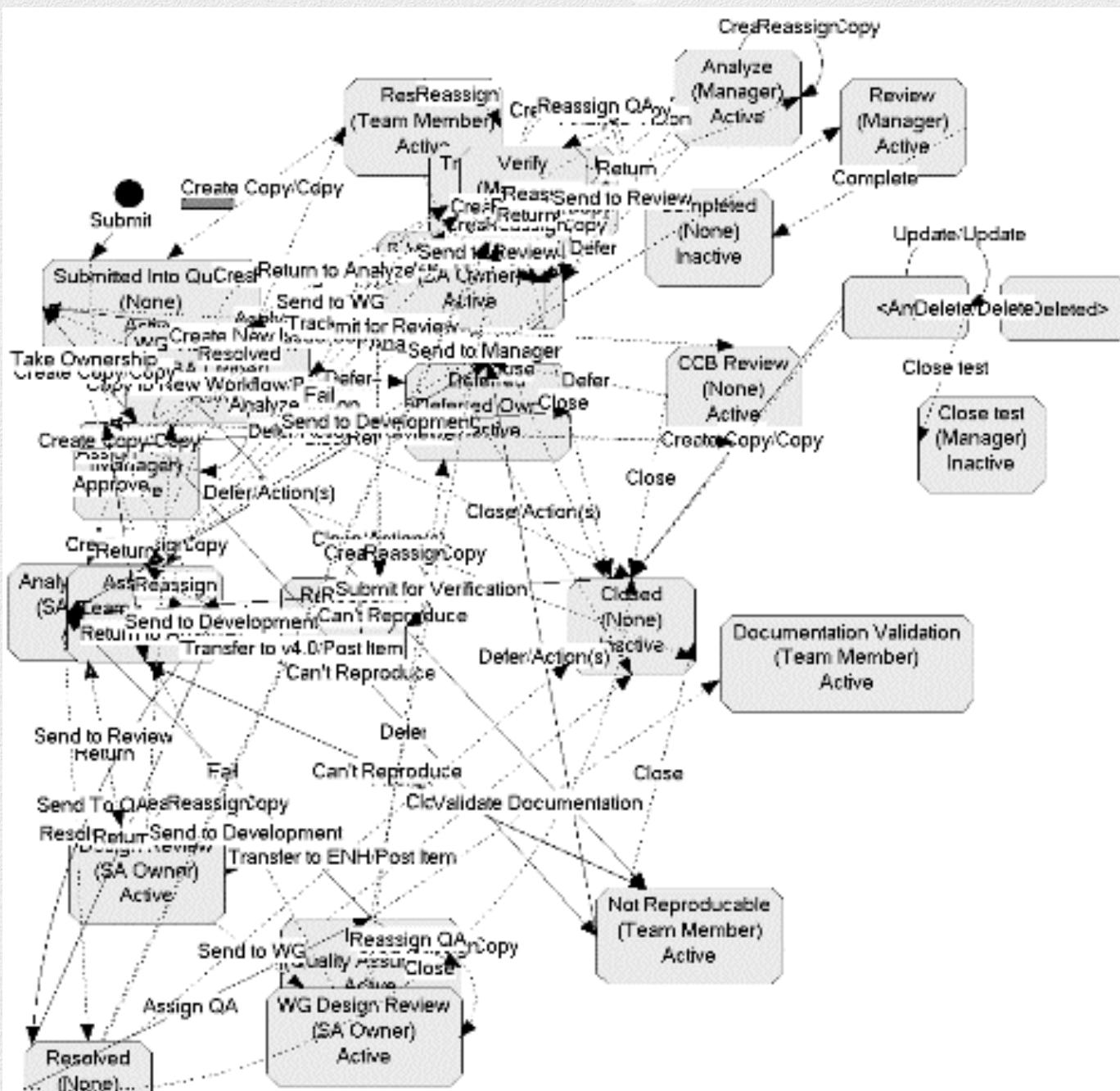
The Daily WTF

Posted 4-30-2009

"We use a certain 'business mashup' application to power our internal bug tracking system, and we normally let the helpdesk enter our bugs" notes John. "One day, I thought I'd enter one in myself. When I hit 'submit bug', it asked me to verify the workflow and then it displayed this. I decided to call for help instead."



The Daily WTF



Other Tools

- OpenWFE (Java-based predecessor to ruote)
 - <http://www.openwfe.org/manual/>
- WfMOpen
 - <http://wfmopen.sourceforge.net/>
- JBoss jBPM
 - <http://www.jboss.com/products/jbpm/>
- XFlow
 - <http://xflow.sourceforge.net/>



Summary



Summary

“Workflow” is not a tool

Workflow is a bunch of
domain-modeling concepts

Rolling your own is a
real option if you know
how to model it



?



Modeling Workflow in Rails:

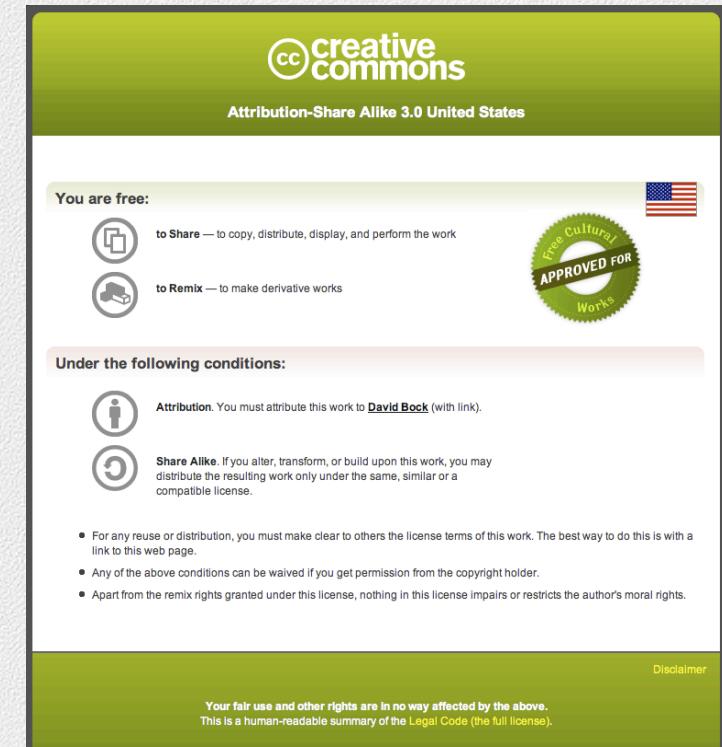
State and Process-Based Workflows

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