

Case Management Pattern

Taxonomy of features and functions for Case Management Pattern



**Change History and Topics to Add**

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| **Date** | **Topic** | **Status** |
| 5/30 | Add Post=approval activities;  Will shift some activities from other areas to new 9000 section  For field inspections, monitoring, renewals, complaints, investigations, restriction on scope, termination, satisfaction evaluation |  |
|  | Clean up 5000 series for workload management |  |
|  | 6000 series is the review work separate from the management of the work queue |  |
|  | 4000 is the submittal |  |
|  | May delete 1000 and 2000 which are prior to submittal; could combined them. Would free up a category. |  |
|  | Appeal process can be its own 000 series; includes submit, screening and assessment, scheduling, getting the people who need to show up, documenting findings, further investigation, decision, action on decision, verification, interface , calculate penalty or award. |  |
|  | Need to walk through with Mahon on Scheduling and Appeals activities. |  |
|  | Note: this is not a time management system. Can have standard amounts for various tasks. |  |
|  | Carve out a 000 series for common funcitons:  Assignment  Work duration standards,  Tickler  Notification  Note documentation  Internal signoff  Customer signoff  See Oil and Gas for examples |  |
| April 7 2019 | Updates to 5000 and 6000 started. Cant believe haven’t touched this for seven months!!!! |  |
| April 8 | 1000 and 2000 should be combined as marketing and outreach. This will make another ‘000’ category available. Something that is very large can be broken in halves. There is also still the 0000 category. 9000 should be kept in reserve or else 0000. | done |
| April 8 | Break 6700 Decision followed by Appeal a new major category with the consolidation of 1000 and 2000 |  |
|  | What to do with renewals? Are they a type of original application? Typically no zero base on information needed. |  |
|  | DPR brings out amendments, label changes, notifications as major and minor changes to something already approved but separate from a renewal. What else does PRDMS identify? |  |
|  | RPS can a separate source of data for verification to match against the certification—is the verification part of the case management system? Can treat it as the audit function? Seems like verification is a separate case management system. |  |
| April 18 | Consolidated 1000 and 2000 |  |
|  | Added Scott Ambler guidance on Phase, Stage, and Task  But Ambler’s guidance is to the software development pattern and not the patterns that apply to the analysis of the business domain. |  |

# Introduction

The Case Management pattern describes the roles, activities, and connections that are or should be found in business functions such as application processing, licensing, appeals management, and more.

# Importance of Applying Pattern Approach

The pattern tells us what activities to plan for in the end to end business process for a case management related solution. Each needed activity serves as a prompt to guide the business analysts in working with the subject matter experts to elicit and define the specifications for the new system. The pattern includes the interactions of the customers and the internal users with the new system as well as the activities that may be performed outside of automation. Activities may be performed by other systems, by vendors, or other agencies.

In looking for ways to enhance the performance the pattern analysts can compare the activities in the pattern to the AS IS process to identify gaps, misalignment, and other variances.



# What is it

Case Management has major Phases around which to organize the Activities. All of the phases are typically found in a case management solution, but not necessarily all of the activities. Each functional domain, such as appeals case management or investigations, will have activities not found in a benefit application case management solution. But the phases will essesntially the same regardless of the business function or the industry.

We apply a Taxonomy to the phases and Activities for Case Management. There are some activities that occur in more than one Phase such as Notification. It is important to make clear that the activity is essentially the same whether it occurs as part of the Application phase or as part of a Fulfillment or Performance Assessment Phase. This makes it easier for the technical designers to know to build the capability (called a Service or Component in technical jargon) ONE time and then re-use it (CONSUME in technical jargon) throughout.

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| **Classification** | **Description** |
| 1000 | Awareness |
| 2000 | Information and Eligibility Explanation |
| 3000 | Account Preparation and Management |
| 4000 | Submit Application |
| 5000 | Work Item Assignment Administration |
| 6000 | Case Assignment and Management |
| 7000 | Cross Reference External Data Sources |
| 8000 | Client Performance Monitoring |
| 9000 | Strategic Planning and Evaluation |
| 0000 | Shared or Common Functions |

# Contribution to the Solution

The Pattern incorporates lessons learned and best practices from efforts across industries and business domains. These may be custom development or commercial off the shelf solutions.

The Taxonomy is a useful way of conducting a gap analysis or other form of evaluation of the capabilities of a COTS or proposed transfer solution to your business domain.

The Pattern then is the metadata to describe and classify and organize your solution’s functionality. In comparing solutions, the Taxonomy is a “canonical model” of case management functionality.

# What happens without a Pattern

The Pattern is based on experience, evaluating that experience and drawing lessons learned to apply to the future. So without the pattern you lose the benefit of learning from those who came before you.

The Pattern makes sense out of the many activities in the process—providing a way to group activities that support a higher level function. When a subject matter expert remembers something important in their business process, you can not only write it down but also quickly figure out where it belongs.

# Evolution and Misconceptions (includes relationships to other pieces)

# Using Patterns Effectively (Introducing to your Projects)

First, verify that the Case Management Pattern is applicable to the business domain you are addressing.

If you already have a Project Charter and other sources of functional requirements, you can either apply the pattern to see if there are other requirements based on the pattern that are applicable. Or you can begin your process modeling effort based on the requirements you have and then add functions to your model based on going through the Pattern’s Taxonomy of functions and features.

The Taxonomy is a useful way of organizing your requirements. You can map existing requirements to the taxonomy and then add requiremetns as applicable to the needs of your domain.

# Anti-Patterns, Tips, Tricks, and Traps

The Anti-Pattern is to assume that any business domain is unique such that there is little to learn from the capabilities and experiences from other systems. The Case Management Pattern may not apply to your domain, but there is a pattern that does apply. Portions of the Pattern may apply such as User Provisioning or work queue management but not others. Use what applies and draw upon other patterns.

The project team that thinks they are addressing an area without precedent has allowed hubris to lead down a path that leads to extra work, re-inventing the wheel, and failing to learn from the efforts of others.

# Overcoming Objections

The Pattern does not dictate a solution. It provides a series of prompts or checklists to aid in assessing what features and functions are applicable. The pattern also provides a level of abstraction that enables seeing the business domain from above to make sense of the end-to-end and not get lost in the details.

# Expertise to Introduce, Knowledge Transfer, Self-Sufficiency, Verification using effectively

# Measuring Completeness

# Levels of Fidelity—Incremental enhancement to avoid Big Bang

# Consequences of Ignoring

# Play to Your Strengths

# Fitting into the Budget, Project Approval, Project already in Flight, Using outside a project

# Ongoing Use following the Project going into Production

You have a very special opportunity to update the base Case Management Pattern based on your experience. Your updates and annotation to the Pattern will help those that follow you on other projects even in other business domains.

During ongoing maintenance and enhancement to the solution following implementation, you should uses your business process models as the shared means of communication across all project members when evaluating changes to the system. You can also refer to the Pattern to see if there are features and functions from the Pattern that you want to add to the solution. Not all functions may have been chosen for the initial implementation.

Awareness and Preparation

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| **Category** | **Activity** | **Description applied to Provider Enrollment** |
| 1000 | Awareness | In Business Interaction Modeling (BIM) the first step in the end-to-end process is to enable the potential customer/client to become aware of the opportunity to become a registered participant or to receive a service. Awareness campaigns can include pushing information to potential applicants (for example, using a list of providers who have recently been licensed) or adding keywords that will index the informational part of the website so that web surfers will become aware of the opportunity to become a Medicare provider. |
|  | Engage Public Relations | Make the public relations organization aware of the program based on a change that may be important to a stakeholder group. |
|  |  | Contact stakeholder groups with program existance and value. |
|  |  | Annual Report preparation (may go in 2000 category) |
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| 1400 | Application requirements | The second step in the classic business interaction model is to explain the eligibility requirements and the types of certification that are possible. This is an opportunity for the customer to do a self-assessment to determine if they think they are eligible, if this is the right time, and if so to collect the supporting documentation required with the application. There can be an online “assessment tool” to aid the customer to further verify eligibility and benefit possibilities. |
| 1500 | Application Portal | The organization may have a web site with a uniform look and feel for all its programs. Such a site can be very rigid and does not readily target the user who is interested in submitting applications or someone from the public who wants to see what information can be accessed on the site through interactive queries. Internal web sites may provide published reports but not dynamic ones. The organization web site can provide a link to the application portal. |
| 1520 | Program Updates | The application portal should have a place to post different kinds of updates. One type is news about the business domain. A second type is news about the application: planned new features, minor changes, revisions to online help, information on the help desk, tips on how to remember your password; features that users may have forgotten about. IN the middle is a description of the fee structure. Someday organizations will charge higher fees for mailed applications than for ones submitted online.  Am betting more people have a laptop than have a stamp in their possession.  The Portal updates are another chance to encourage people to create accouns and submit applications online instead of via mail. |
| 1530 | External References | Links to third party public and private sites with supplemental information, |
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| 1600 | Self-Assessment Application | Members of the public may want to do their own analyses to the extent that is permitted. The portal can provide a link to a public landing page that explains in more detail the query and reporting options. |
| 1700 | Third Party Assistance Referals | Other public and private programs that offer direct services that complement this program where the customer may also apply. |
| 1750 | Network Service Providers | Program’s own and contracted professionals, clinics, and facilities that the customer can obtain if deemed eligible |
| 2600 | Help Desk | The Help Desk functionality includes the classic call center but now extends to include a range of “channels” for customers seeking assistance: on-line chat, email, online self-service such as frequently asked questions and guided tours. Other traditional channels may be supported based on policy that include mail and walk-in centers.  The main help desk function will be aiding in password reset for external users. They are infrequent users and should be forgiven for not having a systematic way to retain their password. |
| 2610 | Call Center |  |
| 2620 | On-line Chat |  |
| 2630 | Email |  |
| 2640 | In-person |  |
| 2650 | Phone |  |
| 2660 | Self-Service |  |
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|  | On Line Program Manual | External users should be able to readily review how to submit an application including eligibility requirements, what supporting documentation to have ready, the time required. There should be a “quick guide” to give the users the basics, a manual that is more detailed with reference to laws and policies, links to the web site where programs are described; links are better than repeating as that can lead to version control issues. |
|  | Organizational Change Management activities | Multiple activities in the sytem development life cycle may be lumped into this phase of the Value Chain. The key is to recognize that explanations of the program that are developed through the automation effort still need to b made available to customers and the larger public. |
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| 2900 | Reporting |  |



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| 3000 | Establish Account | The Third major phase in customer interaction enables the Customer to establish an account.  We separate the activities of the Applicant to create an account as separate from the Submit Application process that follows. Account Management requires verification of the applicant’s identity and a preliminary screening to aid the applicant to make certain that they have a basis for submitting an application; this saves people the time and effort that may go into beginning work on an application only to find out later that they have a fundamental flaw in their qualifications. |
| 3000 | Operational Architecture | Implicit in the pattern are six fundamental concepts:   1. Enable the applicant to submit electronically 2. Have the system identify as early as possible any factors that will constrain the choices so that the applicant does not say, “why didn’t you tell me before spending all that time” 3. Give early heads-up so the applicant knows what is expected in the way of content 4. Allow the application to be saved as a draft 5. Identify what portions of the application can start going through the review process while the applicant is gather other, more detailed information—avoiding an “all or nothing” approach. 6. Verify the application is sufficiently complete during the submittal process so that the applicant doesn’t find out a week later that something minor is missing requiring the clock to start over. |
| 3100 | Identity Verification | The candidate may be asked at this stage or later to provide unique identifiers that the system will verify. The system should have interfaces to federal and possibly State-sponsored online databases that can verify identity. Protocols prevent efforts to “guess” and get confirmation of identity of someone other than the actual applicant. Sources of identity verification may include existing CMS registration, national provider index, and other sources. The Affordable Care Act authorized interfaces to income tax and Social Security data sources. |
| 3200 | Preliminary Screening | For more complex application processes, the Pattern provides an option to enable the applicant to go through a preliminary screening and checklist to make certain that the larger, formal effort will be worth the effort. This preliminary screening may be done without having the applicant first create an account or provide detailed personal information—to allow for anonymity in case the inquirer elects not to submit a formal application. |
| 3210 | Formal Screening | Preliminary screening will catch disqualifying events that the candidate may have missed in their preliminary investigation. Examples may include lack of a work authorization, certain felony convictions, lack of licensure. Typically this screening occurs prior to account creation.  Preliminary Screening may also ask the questions to help determine exactly which type of certification the candidate will seek. A series of questions can take the candidate through a decision tree to get to the appropriate certification. This is an alternative to having the candidate guess in many instances. |
| 3220 | Identify Disqualifying events |  |
| 3250 | Identify application type | The system may constrain the choices based on the applicant’s screening information. Or the system may verify the applicant is eligible based on the initial set of Formal Screening information. |
| 3300 | Create Master Account | This is a small-scale placeholder for a larger Account Management function that can have its own pattern.  The small scale approach does have the applicant first assessing the feasibility of a successful application through a preliminary screening process before going through the specific effort to create an account.  Enabling the Applicant to create and maintain an Account is called Account Management. The Account serves many purposes: enables the client to save a partially completed application and return to complete it later; serve as an electronic signature based on verification of identity; enables checking status; receiving requests electronically for supplemental information or clarifications, and submittal of supplemental information as needed. The Account also expedites the renewal process or handling any new statutory or regulatory requirements for information. |
| 3400 | Create Individual Accounts | The Public is handled differently than members of an organization where the organization submits the application such as a business license. An individual can be an applicant in the case of a professional license or a retirement application; in many instances though the individual is a member of an organization and is under the control of the organization for role and responsibility.  When the organization account is created the first individual is added. Other individuals will create an individual account include their organization. But the link to that organization can only be made by the Administrator authorized to link individuals. A tricky part is making certain that the Administrator only links people from their own organization and not accidently linking others.  There is a special class of individuals called agents. They may be linked to multiple organizations. For each organization the agent may have different roles and responsibilities. Smaller organizations may give more authority to an agent. Agents typically have business domain expertise to aid the organization in their applications. It is up to the business relationship of the Agent to its organizations to ensure that the privacy of each is maintained. The automated system could enable an unscrupulous agent to take information gained from access to one organization’s account and share it with another. |
| 3500 | Link Individuals to Master Accounts | The organization Administrator links individuals to the organization and assigns roles and responsibilities. |
| 3600 | Assign Role for Individual to Master Account | Each role has responsibilities that are defined across all organizations for the application. Each organization has to decide which one or more roles to assign to an individual to give them the appropriate level of capability within the application. |
| 3700 | Check Status (does this belong with the application process? | The Candidate can check the status of an application that may have preliminary verification requirements, one that has been accepted for processing, and one for which activity is undertaken following denial or approval. The ability to check status is based on use of the Account that is linked to the application identifier or certification ID once approved. |
| 3900 | Reporting | Account Management reporting can address:  Types of new accounts by certification type  Types of new accouns by geography  Types of new accounts by applicant demographics: gender, age, primary language, etc.  Number of logins to submit an application  Frequency and event triggering a status check |



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| 4000 | Submit Application | With the addition of the Account Management activities described above, Business Interaction Model classifies the actual submittal of an application as the fourth, not the first phase as explained above. |
| 4010 | Select Application type | This activity can supplement or replace the Preliminary Screening. |
| 4100 | Submit Demographic Information | There may be demographic information that is specific to the type of application selected. The pattern attempts to limit information requests to a “need to know” rather than an all-encompassing one-size-fits-all approach to personal or business information. There are many types of demographic or “profile” information with which to classify the applicant. Some of these are specific to the business domain.  Examples include:   * Organization * Personal * Address * Relationship of the applicant or organization to other entities * Financial * Work * Skill History of the individual or organization * Special Needs and location. |
|  | Verify Organizational Information | The Organization from the Account Management may be subject to verification. The organization may be the head of household to which other family members are associated. |
|  | Submit Personal Information | If the applicant already has an account personal information may already be stored. This then becomes an opportunity to update. |
|  | Maintain Address | Address is separated from personal information because it has its own complexities. An individual may have multiple addresses so there must be special attention given: mailing, home, work, winter (snow bird).  There is a challenge when getting a client to design an online application process to replace a paper-based process. |
|  | Submit relationships | This category is business domain-specific. |
|  | Submit financial information | This category is business domain-specific. |
|  | Submit Work information | This category is business domain-specific. |
|  | Submit Skill History and References | This category is business domain-specific. |
|  | Submit location information | This category is business domain-specific. |
| 4200 | Submit Licensure Information | This category is business domain-specific. |
| 4250 | Submit Business Affiliations | This category is business domain-specific. |
| 4150 | Submit Contact information | Mailing address, phone, email, business address and others are options. Typically an email address is associated with the account separate from the application. The same email address can be used for both. |
| 4280 | Submit supplemental Provider range of service information | This category is business domain-specific. |
| 4300 | Submit Documentation | This typically involves upload of images or text documents that are not key-entered by the candidate. |
| 4400 | Verify Application Scope | The system will verify that the candidate has completed all sections of the application satisfactorily as a basis for responding that the application is ready for submittal. Information that was not completed in an earlier section will be identified and the candidate alerted to complete it.  Any contradictions or gaps caused by information in a later section not consistent with an earlier section is identified if not already detected. |
|  | Submit Need Assessment | For Grant-type applications and This category is business domain-specific. |
|  | Submit Proposal Description | For Grant-type applications and This category is business domain-specific. |
|  | Submit Propose Benefits | For Grant-type applications and This category is business domain-specific. |
|  | Submit Performance Measurement Approach | For Grant-type applications and This category is business domain-specific. |
|  | Submit Endorsement of Proposal | For Grant-type applications and This category is business domain-specific. |
|  | Submit Proposal Assessment Strategy | For Grant-type applications and This category is business domain-specific. |
|  | Submit Proposal Team Quals | For Grant-type applications and This category is business domain-specific. |
|  | Submit Budget | For Grant-type applications and This category is business domain-specific. |
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| 4500 | Submit completed application | Once the system verifies that the application is sufficiently complete and consistent in the information provided, the Candidate may authorize submittal of the application for review and approval. |
| 4600 | Document Management | Document management covers the submittal of documents, providing metadata to describe the type of document, retrieval and review, and linking an existing document to new or other existing applications or permits.  The application may have different types of documents required for different types of application categories. The User Experience can vary in approach such as  -prompt user for a document in response to a type  -let user upload the document and then select the category  -allow submitter to provide only some of the required documents and then submit remainder of required documents later.  In the last option, the system must have ability to maintain a status of less than complete and then decide whether to send ticklers on deadlines to send balance of documents, whether to start work on the application without all required materials, and whether to charge the full fee, and under what conditions to suspend the review and or terminate/disqualify without prejudice the submittal if all documents or other materials not received.  Note: there is a cross reference to 7300 for Documentation related to Business Partners that could also be identical to 4600 |
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| 4700 | Submit requested supplemental documentation | The 5000 review process may identify additional information needs. These requests may be sent via email or to the Applicant’s Account. The explanation will enable the Applicant to click on a link to go to the specific site in the Portal (after logging in) to upload supplemental documents are key enter requested explanations or new data fields. |
| 4800 | Process Filing fees | If there is a requirement for a filing fee, the system will calculate the amount due based on the application type. This may include differential fees for expedited processing or other factors. |
| 4850 | Confirm Application Received | With a completed application and filing fees received via credit card processing, the system will assign a unique tracking identifier. The identifier will be emailed to the candidate, assigned to the Account, and displayed on the screen in a form that the Candidate can save and or print for future reference. |
| 4900 | Application Reporting | Application reporting can address in more detail the types of reporting possible for Account Management in 3000-series above:   * Applicant types * Application Types * Status of applications |
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| 5000 | Manage Workload | This section addresses the management of the application review process. Based on business rules applied in the 5000 series, the application may be routed to a specialty group, may have timeframes adjusted, involve notifications or requests for information, and other administrative activities. The administration or orchestration activities are separated from the actual business rules and decision making activities of the 5000 series.  This separation is a key feature of advanced application architectures. The separation Automated routing to a group  Supervisor assigns  Self-assign  Automated assignment  This section does not address the specific actions within the workflow, only the management of the workflow. |
|  | Enabling Technology overview | Workflow Queues are simply online views of an application assigned to an organizational unit and in turn an individual or group.  The queue is a row of data that has a concatenated key of the:  Application Unique ID  Application Type  Date assigned to the queue  The queue can have lower level portions of the key to show assignment at the level of the branch  Group  Individual  As the assignment goes to a more specific level, it create a new row with a new start date.  So a branch can have a queue of all assignments  A group can have a queue of its assignments  An individual can have a queue of his/her assignments.  It is possible then to see the date assigned to the branch, then the date assigned to the group, and then the date assigned to the individual if tracking to that level. |
| 5005 | Dashboard for Assigner | We assume that there is a landing page or dashboard where all new items are displayed that need to be assigned. The dashboard may display all new assignments to a work group, a larger section, or to a supervisor only, or to an individual. CRUD may limit or enable who can view, assign, or make comments about an item before assignment. The dashboard will show date received, metadata, and ability to display more information before making assignment. |
| 5010 | Assess Application Type for Routing | The application may be assigned manually or through application business rule. The function is the same. Even a manual process can have online assistance:  The application can guide the assigner through a series of questions to aid in the routing process.  The assigner may wish to first know who is available.  There may be two or more specialties to be assigned in parallel.  The assigner may want to look at the workload of the people or groups that are candidates and make a decision.  There may be a quick reference for suggested assignment. This is useful when there may be a workflow established for multiple review steps.  Multiple review steps can be locked in or require each step in the review process to verify the intended routing or have the reviewer select the next review step or return the completed step review to a supervisor when then decides on next step (out and back).  Best practice is to assign to a group and then have the assignment to an individual within a group based on availability or subspecialty or other preferences that work for that group.  Over-engineering or tightly prescribing the routing is not likely to work in practice.  See 5050 for assigning to a group and then having the group decide the specific person assigned.  The application may be submitted in its entirety or there may be allowable segments that can be submitted up front with other required segments submitted later—but allowing the evaluation process to begin. This function assesses what has been submitted and routes according to business rules. A status may be set that is different than from what the system assigned upon submittal. |
| 5020 | Route to Workflow  Queue | Following assessment a row is written that will make the application viewable in the first queue. The assignment to a queue may also send a notification to the queue owner; this is only appropriate when assignments are few in number and the owner does not have a very frequent, automatic behavior to check the queue for a new assignment. |
| 5030 | Execute Tickler for timeframe | Each step in the process may have its own standard timeframe. This can be set by the system based on application type. The System will then provide a tickler to the assigned staff person when the due date approaches and/or when met. |
| 5040 | Set Timeframe for Duration | Timeframe set may be automated where the system maintains a standard duration and even Level of Effort target based on type. Or the amount of time may be manually entered by a supervisor or individual based on internal guidelines. |
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| 5040 | Internal notification | Based on appropriate practices, the system may have an activity that sends a notification such as via email to the queue owner that a new work order has been received. A work order is a task to perform related to an application (a case). |
| 5050 | Queue Owner evaluates Application | Before making an assignment or allowing members to pull the assignment, the Supervisor may provide guidance such as priority, institutional history, special priority designation. This includes allowing team members to view items when they will have authority to pull their own assignments. |
| 5070 | Queue Owner assigns work item | Queue Owenr may perform 5100 to see balance of assignments before making a new assignment to a staff person. Note: the Assignment may be to a group rather than an individual. The process is the same. When an item is assigned or pulled a date stamp enables tracking the duration between the work item entering the queue and the item getting assigned. |
| 5080 | Team Member Pulls Work Item from Queue | An alternative or supplement to a supervisor assigning work items is for the team members to have right to select item to work. Once assigned, the standard timeframes for the application type will set target dates for completion of each major phase. Ticklers can be sent in advance and on target date. |
| 5060 | Supervisor provides Guidance for Evaluation | Applications may have features where it is helpful to obtain guidance from someone more experienced. |
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| 5100 | Supervisor views all Assignment status | The Supervisor looks at balance of assignments across staff to aid in a) making new assignments, b) identifying assignments that are close to deadline, distribution of work for diversity of assignments to staff, and other internal criteria. |
| 5110 | Supervisor filters queue | The default work queue view can be filtered on different paramaters and values:  By staff person  By number of days remaining in Work Schedule Duration  By Application Type  By priority  By application values such as dollar amount |
| 5120 | Supervisor reassigns work item | A staff reviewer may go on sick leave or have another assignment emerge that precludes completing the work item assignment. |
| 5130 | Supervisor assigns a second reviewer | Based on complexity the Supervisor may add another staff person to the current phase of the work item. Someone from outside the named reviewer list may be added as a special advisor; there are several design options for this such as having a reviewer name of “special” and using that as the assigned second person. Guidance notes can then explain the person or organization. |
| 5150 | Override timeframe | The Supervisor or authorized staff person can change the standard review time frame based on complexity. |
| 5140 | Subscribe to Application review | High priority applications may have visibility to senior managers, or to other work groups that have an interest in the applicant for other reasons. This capability enables those not directly doing th review to keep track of what is going on. They “subscribe” to events that occur on the application; candidate events may include: contact with applicant, completion of a phase of the review. |
| 5160 | Re-assign workload | Based on authority an individual may re-assign directly or a supervisor may re-assign. Changes in assignment should maintain the history of assignments, start and stop dates of individuals as well as work groups. A reason for reassignment may or may not be needed. |
| 5400  Xref 5080 | Queue Members pull work item | Members may have permission to pull new items from the Queue. If so, the system writes a new row with the staff person’s identifier. This enables the supervisor to see what is assigned, to whom, and the individual’s own queue now shows the new assignment.  The Work Scheduler value for number of days for work duration is added to the assignment row. |
| 5440 | Staff maintain availability schedule | This is an optional, “road map” feature: staff maintain their planned vacations and training schedule and other activities that will reduce availability to complete work items. Blocking out days will prevent supervisors or automated assignment engines from assigning work to staff who will not be available at critical time frames. |
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| 5250 | Route for exception handling | This is typically a manual process. It may be an added step or an override of the predicted routing. |
| 5300 | Supervisor Tickler Monitoring | This is a view for the Supervisor; the supervisor may set a filter for the number of days until due or number of days past due. Based on the view findings, the supervisor may want to discuss items with the assignee, reassign, see if there is technical assistance neeed or provide guidance to ensure completion |
| 5700 | Escalation | There are two types of escalation: to recognize a very important item that will get special treatment or monitoring; the other is getting the attention of the supervisor due to delays.  The Supervisor or authorized specialist can call for Escalation of an item with special circumstances. Using the two-level status code approach, the Status could be “in review” and the Condition could be “escalation”. |
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|  | Maintain communication with applicant | This has xref to the 6000 series on evaluation of the work item/application. Maintain communication is the administrative task of recording information, having it date stamped, and potentially having ticklers sent to supervisors or others who subscribe to the review of the application. |
| 5500 | Set Review Status Code | There are typically two levels of status maintained on an application or work item: At the highest level is it active or closed. If closed the disposition is something along the lines of approved, withdrawn, declined. If active it can have a current disposition such as “under review or even the stage of review, completed review awaiting decision; on hold awaiting supplemental information from applicant; suspended for lack of action, etc. |
| 5510 | Set status for review event | System assigns initial Status based on whether application is complete  System or supervisor assigns status when initial assignment made  Staff or supervisor assign update to status when one stage of review completed  Staff or supervisor assign update to status of Suspended when customer delays return of requested information; |
| 5900 | Supervisor/Administrator maintains the list of Status codes | This is a list of values maintained in the database. Authority to add/change/delete values is based on a Role.  Status Codes should have start and end dates and not be physically deleted. Deleting takes away the description of the code set for a period of time for that item. |
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| 5800 | Workload Queue Tracking | This is a category for a range on tracking needs. These reports can be statistical or itemizations. Statistical would be the count of items that were received, started, under review at a given point or period of time, completed, returned. |
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|  | Maintain standard schedules by application type | This is a list of values maintained in the database. Authority to add/change/delete values is based on a Role. The standard schedule is required to set the expected completion date. Settign the end date can be done by the system and then over-ridden with authority, or entered manually where the schedule is guidance. The schedule may be guidance where supervisor sets a shorter period based on knowledge of the item.  The danger of standard schedules is that the get treated as a minimum rather than a maximum time period.  Standard schedules (of duration and level of effort) should have for their entry a start and end dates and not be physically deleted. Deleting takes away the description of the code set for a period of time for that item. |
|  | Maintain tickler times | Ticklers may be set to occur two days before a due data and the day of a due date for a phase in the evaluation of a work item. Typically the supervisor will manage the timing of ticklers. |
|  | Maintain who gets notified on a tickler. | A tickler may go to the staff person assigned, in some cases to the supervisors, and possibly to those who subscribe to the application and to the applicant. |
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| 5900 | Reporting | Workflow queue reporting can address:  Backlogs  Duration for routine applications by type  Duration for applications by type that require exception processing  Level of effort when staff time is allocated  Application status within and across queues by type  Duration and level of effort by source for the application type.  It is also possible if desired to analyze duration and level of effort within application type of applicant demographics. |

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| 6000 | Application Review and Approval | This phase addresses the business rules and verifications required to approve an application. There may have been initial verifications at the time of the submittal but additional verifications may be needed. The timing and sequence of these verifications may be based on availability of the data, cost of undertaking the verification, authorizations or other factors. Each verification function should be implemented as its own isolated service. The organization can then elect to have some verifications done at the time of submittal and others later in the process. Therefore, some examples of verifications show in the 3000 Submittal process could arguably be categorized as 6000 functoins. |
| 6100 | Evaluate Application for Orientation, overview, context | Evaluate Application placeholder: use Hiren Vashi’s user stories to derive areas of functionality |
| Xref to 5500 maintain status | Maintain Application Status | Based on exceptions, supplemental information needs etc the clock for service level agreement may be suspended pending response from applicant |
| 6200 | Verify Applicant Eligibility | This is a major category and is specific to the business domain’s statutes, administrative law, regulations, and more.  Eligibility should be maintained through Decision Modeling whether implemented through custom coding, a COTS, or a business rules engine.  The Eligibility at the time of application submittal may not be as detailed as required once the application goes into internal review processes.  There may be a need for a third party verification that can only be done in a batch mode or with a longer service level agreement than can be performed as part of an online submittal. These additional checks may identify issues that require clarification or supplemental information from the applicant. |
| 6300 | Verify Eligibility for selected program option | As with Applicant Eligiibility, there may be detailed options for the applicant to provide after submittal. Also, based on the added applicant eligibility, there may be more or fewer or more refined program options that require the applicant to respond. |
| 6230 | Request Clarification or Supplemental Information | Xref 5230  This function addresses how the applicant will be requested to provide information.  This may include maintaining the content of messages/emails/letters sent to the applicant.  The content of communications with the applicant is controlled at the level of the phase/stage.  The overall automation capability to maintain the content template-based content will be in a shared function (see: |
| 6400 | Maintain Application Status | Based on exceptions, supplemental information needs etc the clock for service level agreement may be suspended pending response from applicant |
|  | Applicant External system cross reference | The applicant’s eligibility may be impacted by flags on the company or the individual. Examples of external systems to check include Consumer Affairs for business or professional licensing, Department of Business Oversight, amounts owed for past due income taxes, disputes on unemployment insurance, other professional or business licences involving Department of Business Oversight or other agencies. Amounts due for Child Support in Arrears, citizenship, valid residency, and other criteria may apply. |
| 6500 | Order special evaluation | Authorized reviewer proposes and gets approval to have a specialist conduct a unique evaluation when standard criteria do not address all situations. |
| 6600 | Conduct in-field inspection | Verify the application through an on-site inspection. This includes provisioning, conducting, recording findings. |
| 6670 | Perform Supplemental Attestations |  |
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|  | Perform Calculations |  |
| 6700 | Approve Application |  |
| 6710 | Determine Delegation Level for Approval | Based on dollar amount, type of app, type of applicant the group or person with authority to approve may differ. |
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| CANDIDATE for a separate major category after consolidating 1000 and 2000: Offer, acceptance, appeal and renewal. But does renewal belong here or as a type of registration. | | |
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| 6720 | Prepare Offer | The applicant may be offered alternative proposals. A benefit program may offer different amounts based on the duration; a loan may have different terms based on payback length; an insurance plan different premiums based on which provisions are selected or co-pays. |
| 6730 | Submit offer to Applicant | Obviously there is a close link between the offer and submitting the offer to the Applicant. |
| 6740 | Applicant selects a Proposal Alternative | The Applicant may need to do a detailed analysis of options. Although the simulation capability may have been offered during the application process, there may be greater detail at the time of the formal proposal so that running analysis with actuals is now needed. |
| 6750 | Applicant authorizes selected alternative | Authorizations are increasingly done through electronic signature. The account used to submit may have sufficient authentication of identity to make return of the selected option sufficient but typically some type of signature is needed. |
| 6760 | Verify final alternative selected | Dates of eligibility, remaining dollars, other factors could impact the final disposition. There may be a second round of eligibility verificaitons required based on the passage of time. |
| 6770 | Maintain account balance | An award amount may go to a separate or internal accounting system to create an account receivable, reduce an encumbrance. |
| 6780 | Update Amount and conditions | If expedited approval and award made on interim information, then updates to data may be collected and lead to a modification to the final approval. CalPERS retirement benefits at one time were done this way. |
| 6790 | Perform Cross-checks | There may be a final verification of income, other resources, dependents, residence, licensures and other cross-checks required at the time the final agreement is reached. |
| 6800 | Approve Application |  |
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| 6810 | Request Wet Signature | The Applicant can print the approved application that will include a bar code. |
| 6830 | Submit Wet Signature | The newly approved candidate may be required to provide an original signature and mail the original or electronically submit a facsimile. |
| 6840 | Process and Match hardcopy with electronic file | The returned, signed application with the bar code will be scanned to automate matching the imaged document with the electronic application. Imaging done where a hardcopy is submitted. Facsimile signatures submitted via email or fax or uploaded using the Candidate’s Account Management are scanned to match with the electronic application. (Even though a softcopy is submitted via the Portal using the Candidate’s Account ID, the form is still scanned to verify the match to the application that was approved. |
| 6890 | Issue certification | The newly completed application with signature prompts a response to the newly certified person via a combination of email, regular mail, or the account. The response includes the formal certification document. If sent electgronically the person may print it as well as save it for future needs. Hospitals, medical groups and employers may require the certification. |
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| 6800 | Process Appeal | The applicant may not accept the limited choices or the outright rejection. This can begin an appeal process. An appeal is a special type of case in itself. All of the case management activities are duplicated for an appeal. Additional features may include scheduling in-person meeting, scheduling the specialist who attends an appeal, scheduling appeals panels. |
| 6900 | Renewal notification | Note: activites 6930 onward are duplicative with 4000 series activities for an original application. |
| 6910 | Select items (people) for renewal | Licensees, grantees, others are typically notified they need to renew. The renewal notice is send at a time set through an administrator-defined renewal lead time in advance of the renewal date. |
| 6912 | Maintain renewal notification narrative | The system will maintain a wide range of letters, emails, and other communication content that is standardized for a specific purpose. Each notification type has one or more notification type content which may be a sentence, paragraph or multiple pages of content. |
| 6920 | Amount to pay | Calculate amount to pay with the renewal notification |
| 6930  Xref payment in 4xxx | Applicant pays renewal | The solution should encourage customers to pay online using a credit card or electronic funds transfer. There is a compelling argument for a higher surcharge for submitting via mail or in-person. Kiosks can support in-person submitters. |
| 6940 | Submit renewal application | The renewal may require documentation and editing of information which is a specialized version of the same functionality that goes into an initial application. |
| 6950 | Submit renewal documentation | The renewal may require documentation and editing of information which is a specialized version of the same functionality that goes into an initial application. |
|  | Special fee calculation for renewal in arrears, penalties, interest | Where an initial application may or may not have a late pay feature, a renewal definitely does. When the renewal is submitted the system must calculate the amount owed by this specific applicant. Business rules will address whether the payment is late, has a penalty and/or interest, number of years late. |
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| 7000 | Interface to Business Partner Data Sources for Verification |  |
| 7100 | Interface to Vital Statistics | State or national vital statistics can provide notification of deaths. |
| 7200 | Interface to Licensing Systems | Interfaces can go to a legacy licensing system, to other federal licensing or registration systems, and to State licensing systems. Such interfaces can support notification when an applicant or enrollee has been disciplined or had a license restricted or terminated or non renewed. |
| 7300 | Document management seamless integration | Document management covers the submittal of documents, providing metadata to describe the type of document, retrieval and review, and linking an existing document to new or other existing applications or permits. |
| 7310 | Upload |  |
| 7320 | Classify |  |
| 7330 | Maintain |  |
| 7340 | Retrieve and View |  |
| 7350 | Cross Reference |  |
| 7360 | Notate Document |  |
| 7400 | Fraud, Waste, and Abuse Investigation Interface | This is the Interface to a separate Fraud, Waste and Abuse system. The functionality in this area is addressed in 8500 if it is an integral part of the provider enrollment activity. An Interface is important if cases originated for Investigation of Fraud, Waste and Abuse are investigated in the Provider Enrollment system. Fraud in the application process can be addressed in the Provider Enrollment system or a separate system. If a separate system is used for enrollment fraud investigations, then the interface is used to export applicant data to the fraud investigation system. Similarly, an external Fraud Waste and Abuse system may want to extract application or enrollment data for its investigation. |
| 7500 | Perform Site Inspection | A condition of application approval can be a site inspection. There is a series of tasks such as scheduling, conducting the site visit, documentation of findings, followup requests, revisions to the application. |
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| 7900 | Interface Reporting |  |

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| 8000 | Monitor performance | Performance monitoring is a two-way street. It may be mandatory to monitor the performance of newly certified medical and allied health providers. We use the term probationary here but that is not intended to be Medicare-specific but a generic case management term. CMS may have its own pilot or fully implemented monitoring for new and experienced people and businesses.  The 8500 series addresses research, reporting and analytics to identify fraud, waste and abuse.  The practices for fraud waste and abuse and their detection can vary by certification type (various medical and allied health disciplines.)  The analytics are typically done outside of the case management system must readily integrated. We have built and support field audit and investigation systems for insurance and for professional and business licensing. We also provide development staff for Pondera, a leading claims adjudication fraud, waste and abuse as a service. Our case management and investigation functionality can interoperate with any Fraud, Waste and Abuse solution that CMS chooses; if asked to serve as the prime contractor and to choose a Fraud, Waste and Abuse solution, we will bid the Pondera product. |
|  | Dashboard for Workload | The dashboard serves as a landing page for the customer, the supervisor, and the specialist. The dashboard will have the assigned roles, work assigned, and other optional information.  The dashboard can include a history of work performed as well based on business needs and interests of the organization.  Executive management dashboards are different from staff with item processing responsibility. The Executive Dashboard is statistical summaries useful in reporting productivity and performance and justifying staffing. |
|  | Trend Analysis | Typically a combination of statistical counts and graphical depiction of types of items over time where there may be a default timeframe with ability of user to set their own point in time or range and then show:  Total reeived, total completed processing, number in progress at this time; can be show for the end of each month for the user-defined data range. |
|  | Demographic Analysis | Demographics provide the first level of insight toward ability to predict future workload as to identify if there are anomalies in whom is getting served. Geographic area may be underrepresented that indicates either a lack of awareness/publicity or where there is a lack of enforcement. |
|  | Application Type Trend analysis |  |
|  | Link Analysis | Link analysis is increasingly popular due to advances in software capabilities and access to third-party data sources.  In organized crime and terrorism, the ability to identify multiple people originating emails or internet usage from the same IP address; businesses sharing the same address; the utility bill going to one person but another person showing the address as a residence or place of business. This type of link analysis is enabled by the ability to purchase databases of utility data or through legally authorized data acquisition.  Link analysis software products enable a graphical depiction that shows a node where two people share an address and then separately those two people are also on the board of the same company. If one of those people has past fraudulent activity then there is reason to look more closely at the second person as either a new target or as a potential victim. |
|  | Utilization Review |  |
|  | Cross Program Analysis |  |
|  | Total Cost of Operations Analysis |  |
|  | Unit Cost Analysis |  |
|  | Mainstream Workload LOE and Duration |  |
|  | Exception Processing LOE and Duration |  |
|  | Customer Perspective is Duration |  |
|  | Internal Perspective is Level of Effort for Task, Suspended, end to end |  |
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|  | Monitor Probationary period |  |
| 8xxx | Complete probationary period |  |
| 8500 | Fraud, Waste, and Abuse | Fraud, Waste, and Abuse (FWA) is hard to do through standardized reporting and simple queries. Link analysis can identify unusual associations. Setting a range for acceptable values can then narrow down the cases that will then be investigated through investigators or other “hide and seek” heuristics. |
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| 8700 | Renewal notification | Licenses and even awards can have an annual or other cycle for revewal. A probationary or tentative approval can have a shorter duration that must be prompted for renewal on a different schedule.  Rather than waiting for the registrant to initiate the payment or application the system typically will issue a renewal notification. This can extend to providing a link for the recipient to click to go straight into the application to submit the renewal and make payment. Otherwise the process mail call for the recipient to on their own initiative key enter the web site and go through the login process. |
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| 8900 | Interface Reporting | This reporting can address both interface activity and fraud detection and fraud investigation volumetrics. |

Restarting to address a range of actions that follow the Approval or Denial of the Application



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| 9000 | Post-decision Process | This section addresses activities that can occur following delivery of the product or service. This includes renewal processing, field examinations, audits, complaints, investigations, actions that limit conduct, and assessment of satisfaction. |
| 9100 | Adjustment | Updated information, recalc, clawback, added payment, new conditions |
| 9150 | Evaluation | Note that renewals are 8700; |
| 9200 | Inspection | Compliance verification: survey, field inspection, prioritize for inspection, conduct inspection  Inspection is different than Investigation.  Inspections can be initiated based on a cycle or within a cycle. A program may have a mandatory nspection every third year, or an inspection required at least once every third year. Where there is a long maximum time frame, the Licensing organization may choose to identify higher-risk targets to inspect every year and lower risk licenses left to a longer cycle that is mandatory but not otherwise having an obvious need for attention. |
|  | 9210 Recipient Reporting | Recipients of grants and licenses may be required to submit an annual report even if there is no payment required. A grant recipient may have to show results from the award; A licensee may have to demonstrate they are making use of thee permit and not keeping it on the shelf; or show they are using it and not sub-letting it. |
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|  | Prioritize | The system has parameters defined where the client enters coefficients (values) and entities are identified that meet the filtered results. The user may go through iterations to refine the values for the parameters to get to right sized list based on available staff. |
|  | Target | Discretionary selection may be organized based on geography or organization type. The user would filter for inspection licenses in a geographic area, or of an industry type. |
| 9300 | Complaint | Public may complain against a licensee, facility, or be a whistleblower |
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| 9400 | Inhouse Complaint Assessment | Where the call center or specialist followup can be resolved through clarification with the complainant and target without involving others. |
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| 9500 | Investigation | As noted above 9500 Investigation is different than 9200 Inspection. An Inspection may lead to an Investigation. Complaints may lead to an investigation when not resolved by the call center or inhouse complaint resolution |
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| 9600 | Citation | An investigation may lead to a citation or short of a citation and agreement with the recipient to affirm positive behavior. An adjustment to terms of the award requires action under 9100. |
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| 9700 | Appeal | This is a major category which typically gets little attention. Each appeal is a case in itself. A separate appeal management system may be used rather than having a small module within a larger case management system. Appeals may require scheduling inperson meetings that are not typically part of a licensing system. |
| 9720 | Schedule | Scheduling is a major category that typically gets little attention. The DMV is a notable example of a licensing program where Scheduling is required. Breakdowns in the scheduling process has undermined the credibility of the entire organization and system even though overall licensing and registration do many things well even with older technology. |
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| 9740 | Conduct Appeal hearing |  |
| 9800 | Decision on Appeal |  |
| 9900 | Actions based on Appeal Decision | Where do we do refer for criminal action? Blackballed/suspended/on probation |

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| 0000 | Shared Functions | These are capabilities that are used across multiple functions of the system |
| 0100 | Letter writer |  |
| 0200 | Notification |  |
| 0300 | Tickler |  |
| 0400 | CRUD management |  |
| 0500 | Business Rules Authoring |  |
| 0600 | Work Flow authoring | This includes standard routing directions, escalation, ad hoc routing |
| 0700 |  |  |

References

Scott Ambler proposes an approach to documenting patterns:

See <http://www.ambysoft.com/processPatternsPage.html>

I infer that a Phase is a Theme, a Stage is a function, an a Task is a step or small Stage. This fits well.

**How To Document A Process Pattern**

I believe that there is a need to combine the existing work in process patterns, well defined (yet still evolving) within the patterns community, with that of the existing process improvement community. The implication is the need for a format/template that both communities understand and agree to. In that light, immediately below is one way that a process pattern can be documented and following that I have included links to what others have to say on the subject.

**Process Pattern Format:**

**Name.** Provide a concise, strong name for the pattern, such as Program or Reuse First.

**Intent.** Describe the process pattern in one or two paragraphs, providing if applicable a graphical description of the process pattern. Common graphical notations applied to process patterns include, but is not limited to, flow charts, process diagrams, UML activity diagrams, and data-flow diagrams.

**Type.** Indicate if it is a Task, Stage, or Phase process pattern.

**Initial Context.** Indicate the situation to which the pattern solution applies, and if applicable the entry conditions that must be true before the process may begin.

**Solution.** Describe in detail how to perform the steps/activities of the process pattern. You may also choose, particularly for phase and stage process patterns, to describe management, quality assurance, and risk management issues, as well as indicate potential metrics to collect when working the process.

**Resulting Context.** Indicate the situation/context which will result from performing the process pattern solution, including if applicable the conditions that must be true for the process to be considered complete.

**Related Patterns.** Indicate the other patterns that this pattern is composed of, is a part of, or is associated to.

**Known Uses/Examples.** Indicate where/how the process pattern has been applied in use. For example, the Technical Review task process pattern can be applied to the management of peer reviews, code reviews, model reviews, and management reviews.**.**

If you are writing a single process pattern, and hopefully publishing it to share with the rest of us, then I would suggest that you follow this format to the letter. If you are strictly writing a reference book or reference web site, presumably a collection of process patterns, then I would also follow this format or one close to it. If you are writing a process improvement-oriented book, as I did, you might choose to get a little more lenient in your approach. You’ll note that in my book I followed this format, for the most part, for phase and stage process patterns, but was much less systematic for task process patterns. It was simply a matter of usability. I could just have easily written a very structured reference manual (yes, [*Process Patterns*](http://www.ambysoft.com/books/processPatterns.html)can and should be used as a reference manual) but it wouldn’t have flowed as nicely and it wouldn’t be as usable to its readers. My advice is to do what you think is best for your readership, that the format described above is merely a good suggestion.

[Disciplined Agile Delivery: The Foundation for Scaling Agile](http://disciplinedagiledelivery.com/) [Agile Modeling: Practices for Scaling Agile](http://agilemodeling.com/) [Agile Data: Practices for Scaling Agile](http://agiledata.org/) [EnterpriseUP: Agility at Scale](http://enterpriseunifiedprocess.com/) [AgileUP: Towards Disciplined Agile Delivery](http://www.ambysoft.com/unifiedprocess/agileUP.html)[Ambysoft Inc.](http://www.ambysoft.com/) [Scott Ambler + Associates](http://scottambler.com/) [Follow @scottwambler on Twitter!](http://twitter.com/scottwambler)

IEEE Agile Standard

# IEEE/ISO/IEC 26515-2018

## ISO/IEC/IEEE International Standard - Systems and software engineering - Developing information for users in an agile environment

**STANDARD** by IEEE/ISO/IEC, 12/20/2018

<https://www.techstreet.com/ieee/standards/ieee-iso-iec-26515-2018?gateway_code=ieee&vendor_id=6936&product_id=1948057>