AITS Project Management Life Cycle

AITS – Portfolio Management Office - 2009

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AITS - Project Management Life Cycle: Introduction

The Portfolio Management Office (PMO) provides guidelines and standards for project management in AITS. The PMO formed a working group to define the Project Management Life Cycle (PMLC) for AITS led projects. The PMLC and standards have been developed to assist project managers in the planning and execution of projects as well as to provide a documented, repeatable process to enhance and standardize project execution and performance.

While we have attempted to define the PM process and deliverables 'end-to-end', the nature of the project will dictate which elements are applicable to the respective project.

The PMO has identified five project types that should account for most of the projects managed by AITS. Those project types are as follows:

Project Type	Description
Software Development Project	Full end-to-end analysis and development project.
Analysis Project	Project to assess feasibility and scope of a potential implementation project. Deliverable is functional specifications and an implementation project template.
Software Upgrade Project	Upgrade to existing software.
Hardware Installation / Upgrade Project	Installation of new hardware or upgrade of current hardware.
Routine OS Level Maintenance Project	Recurring periodic maintenance for operations / infrastructure.

In future a version of this documentation, PMO will provide documentation of the PMLC as it relates to all of the project types identified above including pre-built project plan templates customized by project type. As of this current version of the PMLC, the life cycle has been designed only for software development projects.

For Software Development projects, we have worked with the Software Engineering Process Group (SEPG) as they define the software development life cycle (SDLC). In order to maintain consistency in the processes, deliverables and terminology between the PMLC and SDLC, we are sharing this portion of the PMLC as a single document. As such, the SDLC documentation is extractable from the overall PMLC documentation as a stand-alone document. In the context of the PMLC for the software development, the PMLC adds the Origination and Initiation phases onto the front end of the SDLC and the Post-close phase on the back end of the SDLC.

For reference throughout this documentation, below is a table which lists the various participant roles and how they map to the current AITS organizational structure.

Life Cycle Role	Participant
Analyst	Architecture, Technical, Functional, and Integration Analysts
Customer	Customers external to AITS, Customers within AITS
Deployment	Deployment Team, Architecture
Development	Architecture, Application and Report Developers, Data Modelers, Data Base Administrators
EAC	Enterprise Architecture Committee
Operations	Application Support Team, EAI Team, Production Control Team, System Administrators, Operations Team, Server Management, Storage Team
PMO	Portfolio Management Office
Project Manager	Project Manager
Project Sponsor	Project Sponsor
Quality Assurance	Quality Assurance Team
Security	Security Team, Architecture

Project Type:

Software Development Project

AITS – Project Management Life Cycle – Software Development Projects

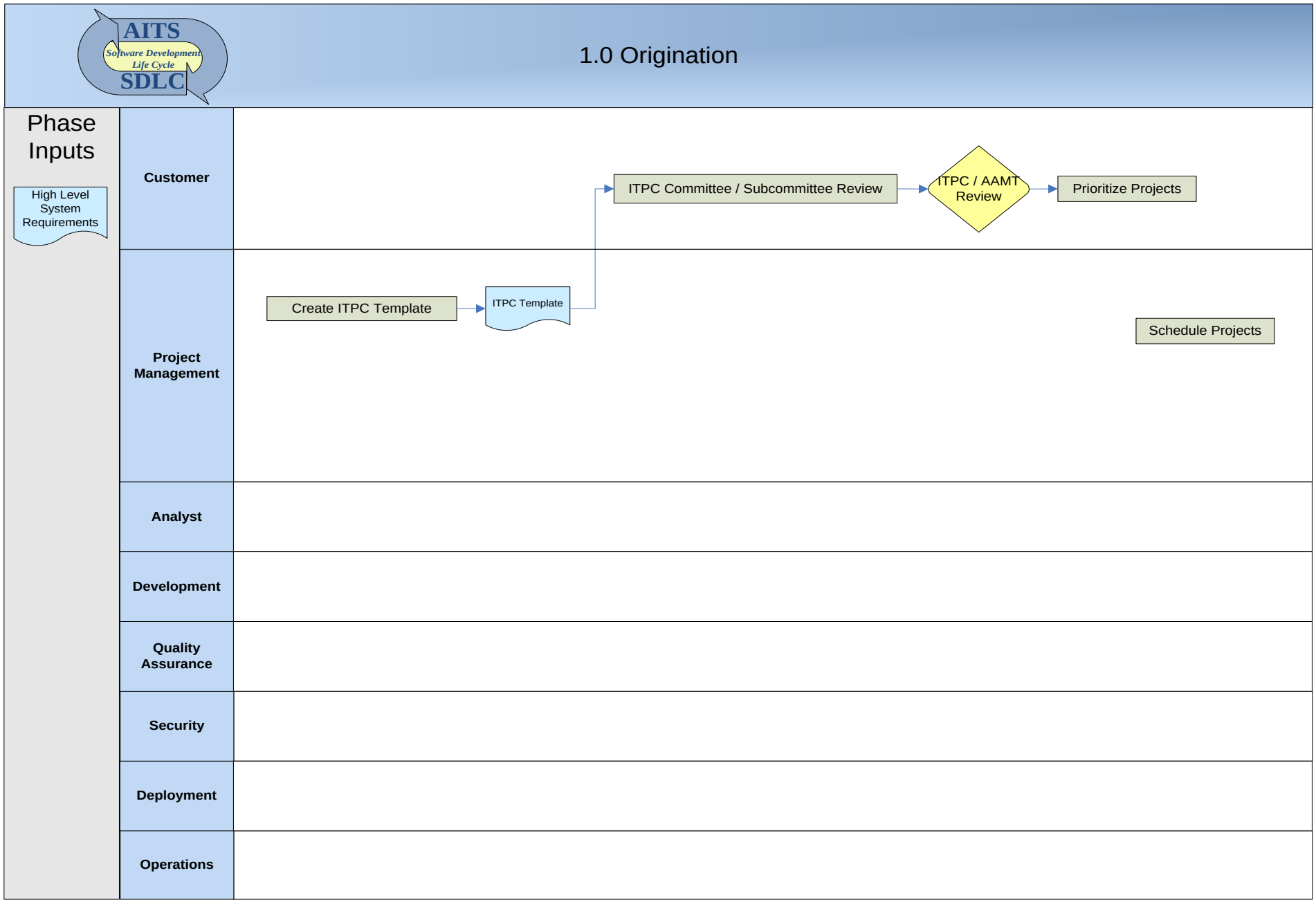
Project Management Life Cycle

1 Project Origination	2 Project Initiation	3 Project Planning	4 Project Execution and Control	5 Project Closeout

Software Development Life Cycle

1 Origination	2 Initiation	3.0 Planning	4.1 Analysis	4.2 Design	4.3 Construction	4.4 Testing	4.5 Training	4.6 Deployment	5.1 Close	5.2 Post Close
- ITPC Template - Project Review - Project Approval - Project Creation - Priority Setting - Project Scheduling	-Discovery meetings -Stakeholder analysis - Communication plan - Project Charter - Project Kick Off -Communication activities	- Project Plan in Clarity (WBS, Resources, Estimates, and Schedule) - Project planning meetings with team - PMO / SMT Sign-Off -Final project plan review and approval with team -Baseline project - Deployment Plan	- Business Rules - DWG Design Collaboration - Application Design - Integration Design - Conversion Strategy - EAC Review - Security Review - Application Design Review - Training Strategy - Testing Strategy -- Communicate -Monitor, Control, and Manage Change	- DWG Design Collaboration - Style Guides - Service Guides - Technical Design - EAC Review - Security Review - Sensitive Data Usage Form - Technical Design Review - QA Master Test Plan - Training Plan - Hardware / Software Order Communicate -Monitor and Control - Manage Change Requests	- EAC Review - Development - System Test Plan - Functional Test - QA Test Cases / Scripts - QA Functional Test - Performance Test Plan - Performance Test - Security Scans - Customer Test Plan - Alpha Test - Training Materials - User Guides / Help Materials - Communicate -Monitor and Control - Manage Change Requests - Hardware / Software Installation - Infrastructure Deployment - Development / Unit Test Cycle - Show and Tell - DWG Design - Code Review - Defect Management	- Technical Design Review - QA Master Test Plan - Training Plan - Hardware / Software Order Communicate -Monitor and Control - Manage Change Requests - IITAA Checklist	- Training Environment - Artifact Staging - Training Security Setup - Customer Training -Communicate -Monitor, Control, and Manage Change	- Application Deployment Checklist - Artifact Staging - Dress Rehearsal - Change Control - Event Notice - System Deployment - Production Readiness Test - Go / No Go Decision - Communicate -Monitor, Control, and Manage Change	- Post Deployment Review - Environment Review and Cleanup - Stakeholder Satisfaction Survey - Post Project Review - Final Project Documentation Review - Short Term Post Project Support - Production Support	- Post Project Survey
Participants	**Participants**	**Participants**	**Participants**	**Participants**		**Participants**	**Participants**	**Participants**	**Participants**	**Participants**
- AAMT - ADSD Managers - Architecture - COE Managers - EAC - ITPC - ITPC Subcommittees - PMO - Project Sponsor - SMT - UA Technology Organizations	- AFM - Analyst - Architecture - Customer - Deployment - Development - Operations - PMO - Project Manager - Project Sponsor - Quality Assurance - Security - UA Technology Orgs	- Analyst - Architecture - Customer - Deployment - Development - Operations - PMO - Project Manager - Project Sponsor - Quality Assurance - Security - SMT - Technical Lead	- Analyst - Architecture - Customer - Deployment - Development - Development Working Group - Operations - Project Manager - Project Sponsor - Quality Assurance - Security - Training Team	- Analyst - Architecture - Customer - Deployment - Development - Development Working Group - Operations - Project Manager - Project Sponsor - Quality Assurance - Security - Training Team		- Analyst - Customer **- Deployment** **- Development** **- Project Manager** **- Security**	- Analyst - Customer - Deployment - Development - Operations - Project Manager - Project Sponsor - Quality Assurance - Security	- Analyst - Architecture - Customer - Deployment - Development - Operations - PMO - Project Manager - Project Sponsor - Project Team - Quality Assurance - Security	- Customer - PMO - Project Manager - Project Sponsor

Origination Phase



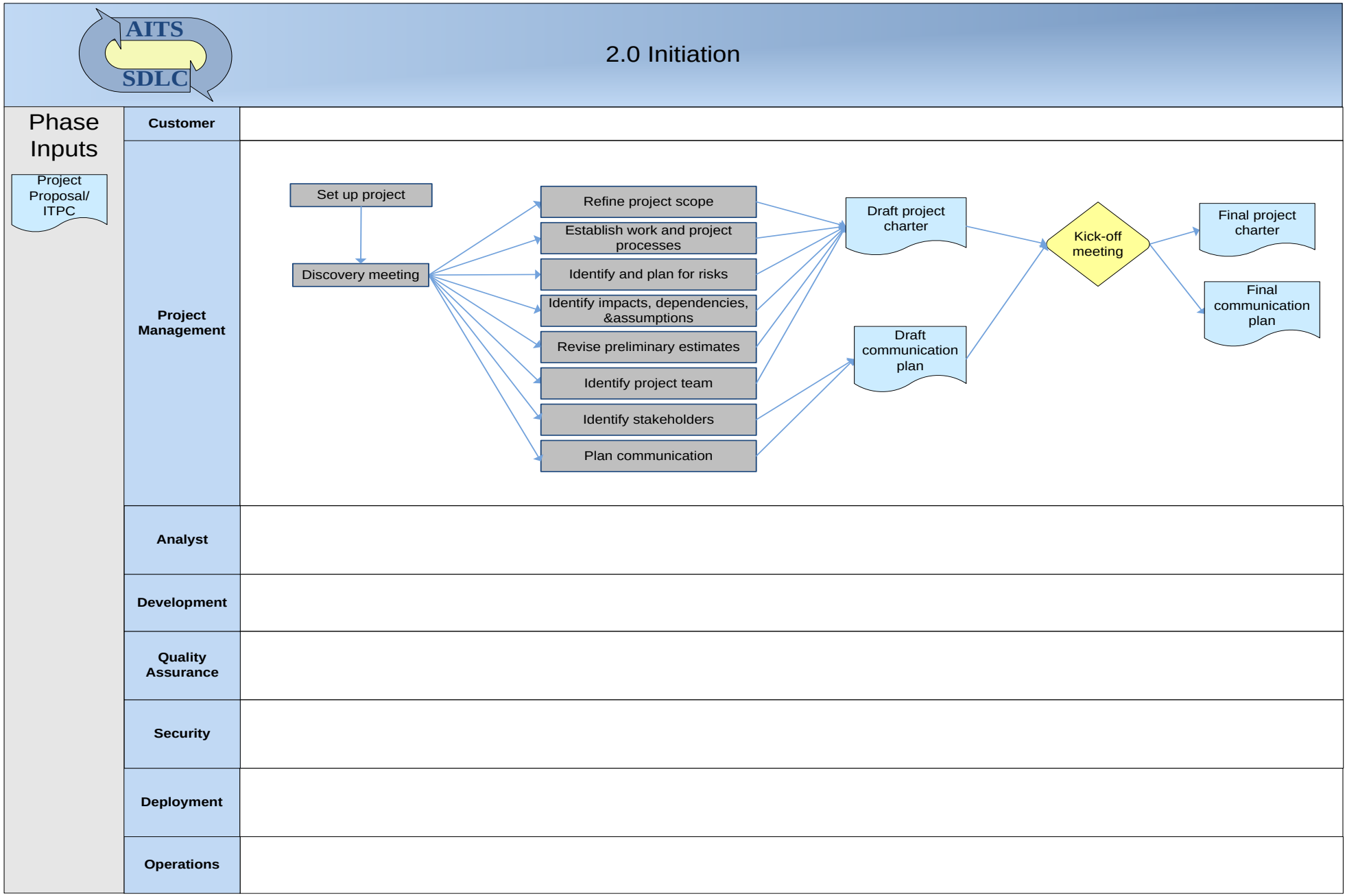
Phase 1: Origination

The purpose of the Origination Phase is to develop proposals for potential projects, route the proposals through the proper review channels, and after review, if approved, schedule the projects based on priority and resource availability. Both ITPC and internal AITS projects will pass through this phase, but will trigger different activities and key deliverables.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Complete an ITPC Level I or II Template	An ITPC template should be completed for all ITPC and internal projects. Internal project templates will be reviewed by SMT while ITPC projects will follow the ITPC review and approval process. The templates are designed to be self explanatory and can be located @ http://www.itpc.uillinois.edu/itpcprojsubmissions If a client requires assistance with the creation a template or the work estimate, a work request should be submitted to the Unicenter AITS-ADSD work requests queue and an analyst will be assigned. The TAM functional area leads will review all ITPC template estimates for reasonableness. All assumptions made in creating the estimate should be clearly detailed in the template. The project proposals should be reviewed at the weekly Architecture / ADSD meetings and the results of this review should influence the estimate. Projects should be further reviewed by this group in the Design and Construction phases of the project. Completed templates should be submitted to ITPC@uillinois.edu.		- Level I or II Completed ITPC Template with Business Case and Resource Estimates, SOW Request (also known as a Project Proposal)	Project Sponsor (Owner) UA Technology Organizations Architecture	For a further description of the ITPC / Work Request process please go to: http://www.aits.uillinois.edu/live/Site.xml?document=RequestWork.xml&focus=N5
Review Project to Determine EAC Involvement	The Project Review subcommittee will review projects that are proposed under AITS and ITPC. The PMO/EAC liaison will meet with EAC leadership and TAM leadership on a monthly basis to identify ITPC projects that may benefit from early EAC involvement. By introducing the concept of "architecture" early on it is the hope that decisions made during the project will take architectural standards and policies into consideration.	- Project Proposal (Completed ITPC Template)	- Level of Involvement by EAC - Feedback to AITS Management or ITPC	Portfolio Management Office (Owner) Enterprise Architecture Committee TAM Leadership	https://intranet.uillinois.edu/departments/pa/eac/ITPC%20%20EAC%20Review/AITS_EAC_ProjectReviewSubcommittee.pdf
Obtain AITS Management Group Review/Approval for AITS Internal Projects	Project proposals (either in the form of completed ITPC templates or AITS internal project proposals) related to technology projects or internal AITS projects will be routed to the AITS Management Group (MG) by the PMO for review at their next meeting. The project sponsor may be asked to attend MG to present the proposal. The proposal may be approved and queued for scheduling (if internal), approved to proceed to ITPC review (if technology), rejected, or deferred with a request for additional information.	- Project Proposal (either completed ITPC Template or AITS internal project proposal)	- Project Approved / Denied	Management Group (Owner)	
Obtain ITPC Subcommittee Approval for ITPC Projects	Completed ITPC templates will be routed to the appropriate functional ITPC subcommittee (Finance, HR, or Student) for review at their next meeting. ITPC subcommittees meet monthly. The proposal may be approved and forwarded to ITPC for review, rejected, or deferred with a request for additional information.	-Project Proposal (completed ITPC Template)	- Project Approved / Denied	ITPC Subcommittee (Owner)	

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Obtain ITPC Review/Approval for ITPC Level II Projects	Level 2 ITPC project proposals approved at the ITPC level will be routed to the ITPC for review at their next meeting. ITPC meets quarterly. At this meeting, level 2 templates may be approved, rejected, or deferred with a request for additional information.	-Project Proposal (completed ITPC Template)	- Project Approved / Denied	Illinois Technology Priorities Committee (Owner)	
Initial Project Setup in Clarity	Using the approved project proposal as a guide, a member of the PMO will initially set up the project in Clarity. This initial set up will include placeholder project plan tasks to hold the effort by role in the project template. Later when the project manager begins to construct the project plan, the placeholder task should be discarded and replaced by the project plan template derived from this PMLC/SDLC.	-Project Proposal (completed ITPC Template) - Project Plan Template	- Project Setup in Clarity	Portfolio Management Office (Owner)	
Determine Priority of AITS Internal Projects	On a quarterly basis, MG will prioritize all ITPC technology projects and internal AITS projects. Projects will be scheduled based on this prioritization and resource capacity. Mandatory projects will be scheduled based on the nature of the projects and production date requirements. MG will further prioritize Internal and ITPC projects where conflicts exist in scheduling.	- Projects to be scheduled in queue	- Priority List of Projects	Management Group (Owner)	
Determine Priority of ITPC Projects	On a quarterly basis, the functional ITPC subcommittees and ITPC will prioritize all ITPC projects approved but not yet started within their functional areas. Projects will be scheduled based on this prioritization and resource capacity. Mandatory projects will be scheduled based on the nature of the projects and production date requirements.	- Projects to be scheduled in queue	- Priority List of Projects	ITPC Subcommittee and ITPC (Owner)	
Set Project Schedule	On a monthly basis, the project schedule for both internal and ITPC projects is reviewed and adjusted based on project prioritization and resource capacity. During this project scheduling process, managers review all projects in flight do determine required adjustments as well as to provide consistent communication regarding project status. After reviewing in flight projects, the managers schedule projects in the queue based on the provided priorities as well as the resource capacity available for new projects. This schedule is further fine tuned based on collaboration with representatives from all of the functional areas.	- Priority List of Projects Resource availability information	- Monthly Project Schedule	Portfolio Management Office (Owner) ADSD Managers COE Managers UA Technology Organizations	https://www.itpc.uillinois.edu/ItpcProjectPrioritize

Initiation Phase



Phase 2: Initiation

The purpose of the Initiation Phase is to develop the Communication Plan and Project Charter to formalize project goals and deliverables, identify project participants and establish roles and responsibilities. The project team will review the Project Charter Communication Plan at the Kick-Off meeting to provide all participants with a shared understanding of project expectations.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Set up project	During project setup, the Project Manager introduces him/herself to the primary team members and stakeholders as well as updates the Clarity project and the SharePoint workspace for the project	-Project Proposal (either the completed ITPC template or an AITS internal project proposal)	- Initial contacts - Initial Clarity updates - Initial SharePoint workspace customization	Project Manager (Owner)	Initiating a Project course and related materials can be found in the AITS SharePoint Document Library under Methodology > Project Management Lifecycle
Hold Discovery Meetings	The purpose of the discovery meetings are to bring all the participants together, introduce them to the project, and give team members a forum for voicing their opinions early on in the process. The Discovery meetings should review the project scope statement (taken from the project proposal), identify missing team members and stakeholders, and the general discussion of schedule, risks, and concerns.	-Project Proposal	- More complete list of stakeholders, updated risks and issues, better understanding of scope, and thoughts on schedule and resources	Project Manager (Owner) Project Sponsor Customer	A template for the Discovery Meeting Agenda and Notes can be found in the AITS SharePoint Document Library under Methodology > Project Management Lifecycle > Templates and Forms > Project_Discovery_meeting_Agenda_and_Notes_Template.dotx
Identify Stakeholders	Work with key project team members, customers, and project sponsor to identify stakeholders and their expectations.	-Project Proposal -Outputs from Discovery Meetings	- Stakeholder worksheet (not for distribution)	Project Manager (Owner)	A worksheet for the Stakeholder Analysis can be found in the AITS SharePoint Document Library under Methodology > Project Management Lifecycle > Templates and Forms > StakeholderWorksheet.dotx
Create Communication Plan	The Project Communication plan is created by the project team early in project to indicate their agreement on how the team will communicate important information during the project - status, meetings, issues, deliverables access, and design/ document reviews. It is recommended that this plan is completed early enough to be included for review at the Project	-Project Proposal -Stakeholder Analysis	- Communication Plan	Project Manager (Owner) Project Sponsor Customer	A template for the Communication Plan can be found in the AITS SharePoint Document Library

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	Kick-off Meeting.				under Methodology > Project Management Lifecycle > Templates and Forms > TEMPLATE-ProjectCommunicationPlan.dotx
Create Project Charter	The project charter acts to define a number of key project elements including a project description, scope definition, and role/responsibility definition. The documentation and review of these key project elements on the front end of the project helps to avoid misunderstandings or confusion later in the project and sets a baseline for high-level expectations. The following are components of and are defined in the project charter: • Project scope • Work and project processes (includes change management process) • Risks • Impacts, dependencies, & assumptions • Preliminary estimates • Project team	- Project Proposal -Outputs from Discovery Meetings	- Project Charter	Project Manager (Owner) Project Sponsor Customer	A template for the Project Charter can be found in the AITS SharePoint Document Library under Methodology > Project Management Lifecycle > Templates and Forms > Project_Charter_Template.dotx
Conduct Project Kick-off Meeting	The main goal of the project kick-off meeting is to familiarize the project team with the project, review the project charter, change management and communications plans and receive buy-in from all project participants. Future meeting schedules will be defined and discussed and meeting minutes will be documented. For large or high risk projects there will be enhanced requirements regarding project monitoring and control. The procedures as described in the next section should be reviewed at the project kick-off meeting so there is an understanding of these requirements as well.	- Project Charter - Communication Plan	- Meeting Minutes -Final Project Charter -Final Communication Plan -Initial draft of tasks as inputs to planning phase	Project Manager (Owner) Project Sponsor Customer Analyst Development Quality Assurance Security Deployment Operations Architecture UA Technology Organizations Decision Support Portfolio Management Office	A template for the Project Kick-off Meeting can be found in the AITS SharePoint Document Library under Methodology > Project Management Lifecycle > Templates and Forms > Project_Kickoff_Meeting_Agenda_and_Notes_Template.dotx
Ongoing activity: Communicate (Implement Communication Plan)	Throughout the course of a project there are a number of recurring activities related to communication. These include the activities identified in the communication plan, which typically consist of: • Weekly project team status reports (Template provided which offers a standardized agenda for status meetings throughout the course of a project) • Maintaining SharePoint workspace with meeting agendas, minutes, decisions, documentation, and status reports. • Project sponsor meetings for reviewing significant project plan changes and progress • Informal communication: walk-abouts, hallway conversations, and personal emails There are enhanced processes and requirements regarding project	-Communication Plan	-Various communication outputs per the Communication Plan	Project Manager (Owner) Project Team Portfolio Management Office	Templates for various types of meetings and resulting notes can be found in the AITS SharePoint Document Library as well as guides to using Clarity and SharePoint

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	monitoring and control for large projects (those with greater than 5,000 hours of effort or $250,000) or any projects deemed of sufficient risk. These should be identified in the project communication plan, but are outlined here as well. For these projects it is advisable that a Steering Committee or Oversight Group be formed to monitor the project execution and collaborate on key project decisions. Templates for Large Projects are included as follows: ▪ Steering Committee Reporting Template – This is a reporting package for periodic steering committee meetings and includes standardized sections for: ○ Project Timeline ○ Significant Event Review ○ Significant Risks / Issues ○ Metric Tracking ○ Change Request and Defect Tracking ○ Budget Report ○ Other ▪ Large Project Budget Workbook – This is a multi-tabbed Excel spreadsheet for tracking actual versus budgeted costs for internal/external labor and non-labor items. All projects of this nature will have a unique set of circumstances which will require extensive customization of the communication plan.				

Software Development Life Cycle documentation begins on the following page.

Software Development Life Cycle

Version 2.0

Overview

The purpose of a Software Development Life Cycle methodology is to provide a documented description of how software is built by AITS. It describes the various phases of the development process and the activities performed by individuals during each phase. It is not meant to be a cookbook approach to software development, but a guide to the best practices and procedures used at AITS for various activities. As software development projects are executed, the SDLC serves as reference to determine which activities are needed for that particular project and provide detailed information on how to accomplish those activities; not every activity listed defined within the SDLC is required by every project. Furthermore, the SDLC provides access to the necessary templates and documented procedures associated with those activities.

The SDLC was developed by the Software Engineering Process Group (SEPG) established by AITS to identify software development processes and practices at AITS that work well, need improvement, or don't exist. This group serves to prioritize the practices that require the most attention and identify the appropriate resources to focus on the process improvements. The process owners are those groups who are the key participants of the process. For more information regarding the SEPG and the approach used to develop the SDLC, refer to the following documents:

AITS SDLC Approach

SEPG Guiding Principles

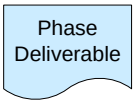
The SDLC is a constantly evolving collection of processes and templates and is meant to improve as better ways of building software are identified. Questions or suggestions regarding the contents of this document should be referred to the AITS SEPG (AITSSEPG@uillinois.edu).

How to Read This Document

The SDLC is comprised of eight major phases: Planning, Analysis, Design, Construction, Testing, Training, Deployment, and Close. For each phase, this document provides a single page swim lane diagram that depicts the various activities performed by the groups and a general order of events for the entire phase. Since the software development process is fluid, the order of events may not always be the same and certain components of a project may be in one phase while others are in a different phase. Following each diagram is a matrix that provides a more detailed description of each activity in the phase and links to various processes, procedures, and templates that further define that function. Each activity illustrated on the single page swim lane overview has a corresponding entry in the subsequent matrix.

The following table defines the symbols used within the diagrams:

Symbol	Description
Activity Description	Represents an activity performed during the particular phase. If there are no arrows in the beginning or end of the activity, then it is started and completed during the phase. The activity may have many participants from various groups, but the activity is shown within the lane of the primary owner of that activity. If there are multiple groups that participate in this activity and is a major part of the group's responsibilities, then it may appear in multiple lanes.
◀◀ Activity	Same as above, however, the arrows indicate that this activity is performed in the previous phase and is carried over to the current phase.

Symbol	Description
	Same as above, however, the arrows indicate that this activity is started in this phase and is carried over to the next phase.
	Same as above, however, the arrows indicate that this activity is performed in both the previous phase and the next phase.
	This represents a formal review step within the phase. The review points determine if the work product is ready to move to the next phase.
	This represents a document or deliverable that is produced as the result of the activity. These are used as either final work products or inputs into other activities.
	This symbol is used for on-page connectors to show hand-offs and dependencies between activities between groups.

It is important that the SDLC documentation focus on the relationship between activities and owners of the activities based upon role and functions instead of organizational structure. If the SDLC is tied closely to organizational structures within AITS, then it susceptible to revisions whenever there are organizational changes within AITS. It is also common for participants in a project to perform a particular role for one project and a different role in another project. For example, a technical analyst may perform the duties of an analyst and a project manager for one project and may serve as the customer in another. Therefore, it is important to make these roles general in nature and not a byproduct of the current AITS organizational structure. However, as organizational changes occur, the SDLC should be reviewed to ensure that the depiction of roles and descriptions of activities are still accurate.

Within the matrix, key participants and owners have been identified who may participate in each activity. There may be other participants within the activities that are not necessarily reflected in the high level process documentation presented within the SDLC. As the project charter and project plan are developed, a detailed assignment of resources will be done for the required activities using the SDLC documentation as an aid in determining the proper resources to assign to a task.

AITS – Project Management Life Cycle – Software Development Projects

Project Management Life Cycle

1 Project Origination	2 Project Initiation	3 Project Planning	4 Project Execution and Control	5 Project Closeout

Software Development Life Cycle

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Participants	**Participants**	**Participants**	**Participants**	**Participants**			**Participants**	**Participants**	**Participants**	**Participants**
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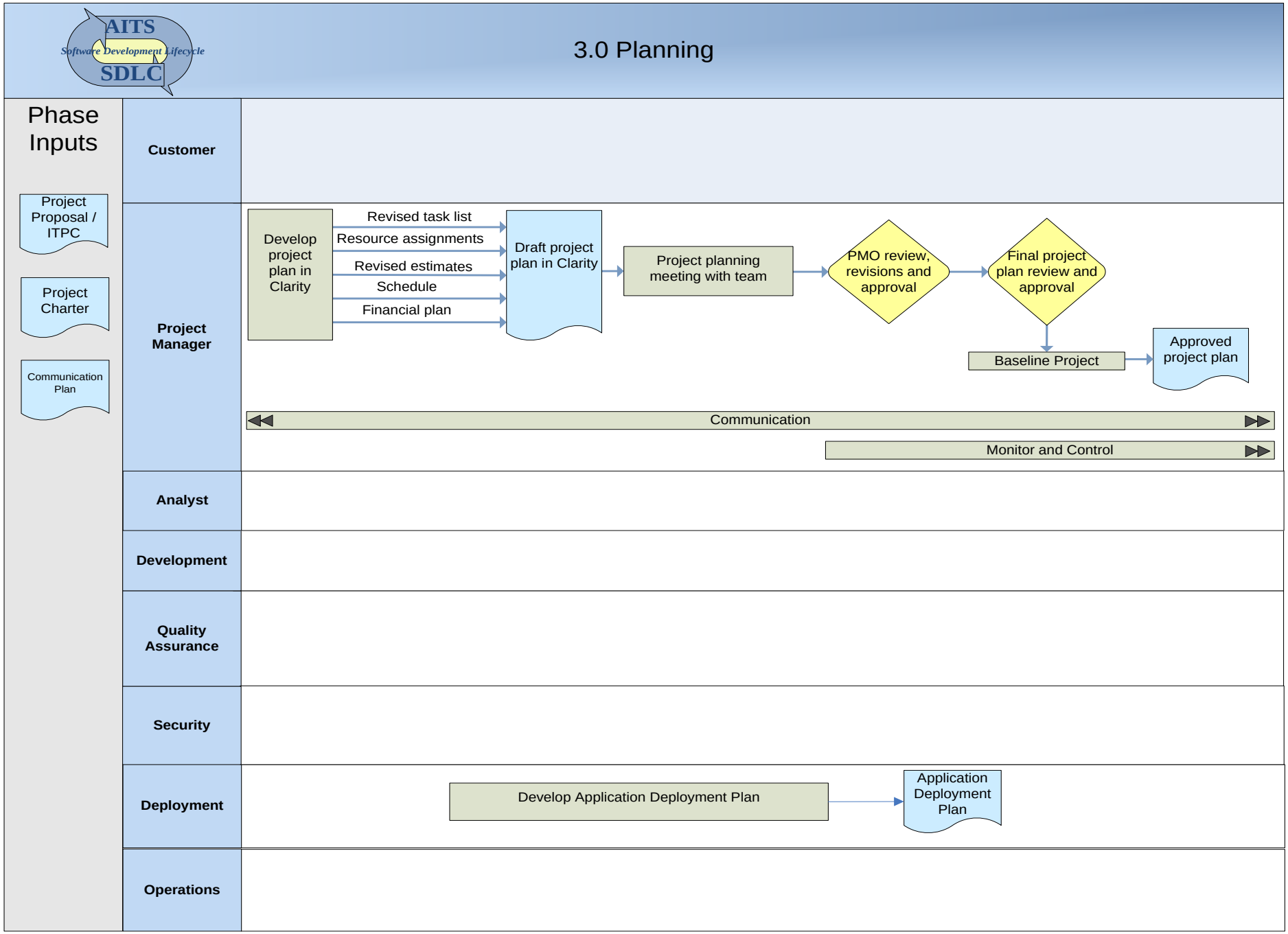
Planning Phase



Phase 3.0 - Planning

The purpose of the Planning Phase is to develop a detailed and complete work plan for the project that can be used by all stakeholders as a roadmap for project execution. The project proposal from Phase 1: Origination and the project charter from Phase 2: Initiation are used as starting points to create the project plan and start the deployment planning process through identifying hardware and software purchases that will need to be made in order for development to begin.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Develop Project Plan	Creating the project plan provides a roadmap for effective project planning and execution, and becomes a tool for monitoring progress throughout the project. The project plan documents the project tasks, deliverables, milestones, schedule, participants and budget and should facilitate communication among project stakeholders. The project plan is a living document that will be consulted and modified throughout the life of the project as factors within and outside the project affect the project elements. While the project plan is the ultimate responsibility of the project manager, input from the entire project team and key client personnel will be required for its development. The project plan is established and maintained in Clarity. The activities described in this documentation will not be applicable for all projects depending on the nature and size of a project. The project manager will need to work with the project team, technical leads and PMO to determine which tasks would not be applicable in certain instances. The project plan is recorded in a series of forms in Clarity. The following activities are required to complete the project plan. Please note that these activities are highly interdependent. **-- Task identification and organization (aka Work Breakdown Structure)**: The Work Breakdown Structure (WBS) is a detailed hierarchal tree structure of deliverables and tasks that need to be performed to complete a project. Steps in creating the WBS would include: ○ Identification of major steps and milestones ○ Sequence the major steps ○ Identify known dependencies between tasks and deliverables ○ Identification of detailed steps and milestones **--Assigning resources to tasks** : This activity includes identifying the project participants and applying these resources or roles into the project plan against the appropriate tasks and deliverables for which they will be responsible. The staff assigned to a project may be identified early in the project, before the project plan is developed or as a result of requirements developed in the project plan and other planning. As early as possible, project managers should consult with the respective team leads to identify	- Project Proposal - Project Charter - Project Plan Template	- Within Clarity, the following information is required to have a project plan 1.Work Breakdown Structure 2. Resources assigned to tasks 3. Estimates provided for each task 5. Start and end dates for the tasks, and start, finish, requested implementation, and implementation dates for the project 6. Critical path for project 7. Financial plan (entered by the PMO)	Project Manager (Owner) Portfolio Management Office	There are a number of pre-populated project plan templates available in Clarity. Typically your project will be set up with one of these plans as a starting point. For more details on the Project Manager's responsibilities during the Planning Phase, please see the Planning a Project course materials and related guides in the Sharepoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle Here is a link to the PMLC/SDLC Project Plan Template located in Clarity. https://clarity.apps.uillinois.edu/niku/app?action=projmgr.projectProperties&id=5022276

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	the resources to be assigned to their projects. Ideally, resources should be identified prior to the project kick-off meeting in the initiation phase so that they may participate and provide input early in the project. As these individuals are identified, they should be documented in the project plan in place of generic role placeholders (i.e. Application Developer, Technical Analyst, etc…). A consideration in creating the project schedule and staffing plan is that they are very interdependent. The availability of additional resources may translate into a shortened project schedule. Conversely, scarce resources may extend the project schedule. If there are dates in the project schedule that are immovable, then resources must be allocated accordingly to meet the required schedule. In the absence of hard scheduling requirements, the project manager should adjust the project schedule to fit the resources available to the project. --**Estimating effort for tasks** : Once the WBS is defined, the project team must estimate the effort needed to perform the tasks identified. Usually there will already be a higher-level estimate that has been prepared as part of the Project Proposal. While this estimate may be used as a reference, it should not be the basis for the estimates in the project plan. The project manager should develop the task effort estimates based on the team's knowledge of the project requirements, prior experience and the advice of others on the project team and in the department. It is best to get estimates from the team members that will be doing the work. --**Scheduling** : Once the work has been defined and the required effort has been estimated, the project manager will create the project schedule. The project schedule should be developed by determining target start and completion dates for the tasks and deliverables in the project plan. --**Financial planning**: The financial plan details the project costs for external resources, equipment, software, and expenses (such as travel and any other project expenditures). For most ITPC projects an initial plan will be entered into Clarity from the project proposal by the PMO. Actual expenditures will be entered into Clarity to track against the budget by the PMO. These are derived from general ledger detail reports on a monthly basis. For very large projects, a separate detailed cost tracking spreadsheet may be used. The PMO will provide help developing and maintaining spreadsheets like these for large projects. --**Critical Path** : Once the project plan is developed, the project manager should identify the critical path in the project. The critical path is the sequence of tasks/deliverables in a project where none of the tasks/deliverables can be delayed without affecting the final project end date. By identifying the critical path in a project, the project manager can pay particular attention to and take needed actions toward the tasks/deliverables on the critical path to avoid delays to the overall project schedule. The critical path is driven by the project task dependencies and milestones in the plan. A PMO team member will assist the project manager in determining the project critical path if needed.				
Project Planning Meeting with	The goal of this meeting is to gather input from the project team on the draft project plan. The goal is to review the tasks, deliverables, timelines	- Draft Project Plan	- Revised Project Plan	Project Manager (Owner) Portfolio Management	

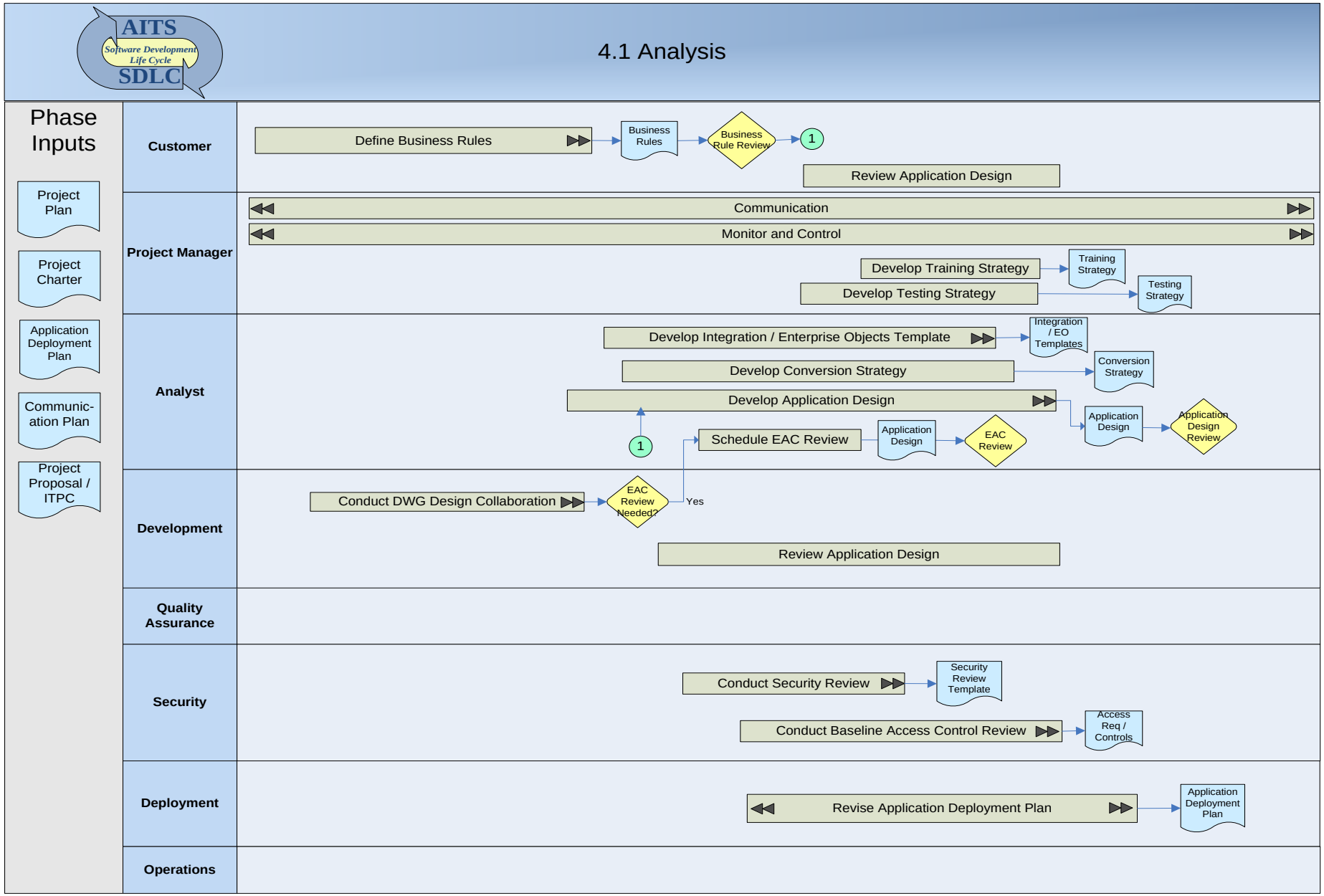
Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Team	and resource assignments throughout the plan. Reviewing this as a group will ensure understanding among all project participants regarding their responsibilities, assigned deliverables and interdependencies between team members and tasks assigned. This will also provide a forum for questions and uncertainties to be discussed so everyone has shared expectations and buy-in for the plan to move forward. The project plan should be revised if necessary based on the feedback received from this meeting. Meeting minutes should be documented to create a record of the participants and major points of the meeting. This meeting will be lengthy and allow more than an hour to go through all the items on the agenda: • Verify WBS • Verify estimates • Verify assignments • Set due dates and schedules The activities described in this documentation will not be applicable for all projects depending on the nature and size of a project. The project manager will need to work with the project team, technical leads and PMO to determine which tasks would not be applicable in certain instances. Prior to the project plan review by the full project team, the appropriate TAM lead should review the project plan for completeness to ensure all required and appropriate steps from the PMLC / SDLC are included in the plan. The project manager should receive and retain an email confirmation of this review an approval.			Office Project Sponsor Customer Project Team	
PMO Review, Revisions, and Approval	The PMO will review the project plan, suggest revisions, and approve it. For large projects or projects requiring additional rigor in monitoring and control, AITS LT must approve the project plan and the PM will need to provide a project presentation to AITS LT during the planning phase of the project.	- Project Proposal - Project Charter - Communication Plan - Project Plan	- Revised Project Plan	Project Manager (Owner) Portfolio Management Office	
Final Project Plan Review and Approval (with project team)	Once the plan is approved by the PMO, the Project Manager should have a final project plan review and approval with the project team. This is a formal meeting to ensure there is still agreement on the project plan.	-Project Plan	-Approved Project Plan	Project Manager (Owner) Portfolio Management Office Project Sponsor Customer Project Team	
Create Project Baseline	Once the project plan has been created and reviewed with the appropriate project stakeholders, the project plan baseline should be created. The project plan baseline creates a permanent record of the original project plan so that performance against the plan can be measured and monitored throughout the duration of the project. Monitoring performance against the schedule and budget of a project can provide valuable feedback during a project to allow for project plan adjustment and contingency planning. Reflecting on project performance at the conclusion of a project can provide effective feedback on the accuracy of estimating techniques and quality of project planning. Once the project plan is complete and reviewed, upon the advice of the project manager, the PMO will baseline the project plan in	- Project Plan	- Project Plan with initial baseline	Project Manager (Owner) Portfolio Management Office	

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	Clarity. If the baselined estimates exceed approved estimates by 50% (Level 1) or 30% (Level 2), the project must go back to ITPC for additional review. Also, for Level 1 projects, if the baseline estimate exceeds 60 days of effort or $100,000, the project must go back to ITPC and AAMT for Level 2 approval. ITPC must also approve any material change in scope, defined as a 25% change in project duration or 10% change in resource requirements. If in the course of a project, approved change requests alter the scope and timing of the project plan, the plan may be re-baselined to track against the modified plan. Project status updates are due on the 1st and 15th of each month and are reported in Clarity.				
Develop the Application Deployment Plan	The Application Deployment Plan is a comprehensive deployment document used throughout the project to prepare the development, test, and production infrastructure and to gather data needed for the deployment process. This document also identifies the hardware/software needs for the new application as well as the logistics and delivery plans for such components. Identification of these resources at this stage will allow the Operations group to begin to plan for the acquisition or provisioning of the equipment. In subsequent phases, this assessment will be refined and the actual products will be ordered.	- ITPC Template - Project Plan	- Application Deployment Plan	Deployment (Owner) Project Manager Development	Application Deployment Plan AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > pplicationDeploymentTemplate.docx
Communication	Throughout the course of a project there are a number of recurring activities related to communication. These include the activities identified in the communication plan, which typically consist of: • Weekly project team status reports (Template provided which offers a standardized agenda for status meetings throughout the course of a project) • Maintaining SharePoint workspace with meeting agendas, minutes, decisions, documentation, and status reports. • Project sponsor meetings for reviewing significant project plan changes and progress • Informal communication: walk-abouts, hallway conversations, and personal emails There are enhanced processes and requirements regarding project monitoring and control for large projects (those with greater than 5,000 hours of effort or $250,000) or any projects deemed of sufficient risk. These should be identified in the project communication plan, but are outlined here as well. For these projects it is advisable that a Steering Committee or Oversight Group be formed to monitor the project execution and collaborate on key project decisions. Templates for Large Projects are included as follows: ▪ Steering Committee Reporting Template – This is a reporting package for periodic steering committee meetings and includes standardized sections for: ○ Project Timeline ○ Significant Event Review	-Communication Plan	-Various communication outputs per the Communication Plan	Project Manager (Owner) Project Team Portfolio Management Office	Templates for various types of meetings as well as guides to using Clarity and SharePoint can be found in the Sharepoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	○ Significant Risks / Issues ○ Metric Tracking ○ Change Request and Defect Tracking ○ Budget Report ○ Other ▪ Large Project Budget Workbook – This is a multi-tabbed Excel spreadsheet for tracking actual versus budgeted costs for internal/external labor and non-labor items. All projects of this nature will have a unique set of circumstances which will require extensive customization of the communication plan.				

Monitor and Control	Throughout the course of a project there are a number of recurring activities related to keeping the project on track and making adjustments to the plan when needed. At a minimum, these activities include:
	
	• Managing risks and issues in Clarity
	• Manage change requests (see note below)
	• Following up on tasks and enforcing schedule
	• Managing action items in SharePoint
	
	• Updating project plan in Clarity:
	  • Tasks
	  • Resources
	  • Schedule
	Complex or large projects may require additional monitoring effort. The PMO can help in developing reports and tools to keep your project on budget and on schedule.
	
	<u>Change requests</u>
	Change requests can be generated during the design, construction and various testing phases. Change requests are defined as major feature or functionality changes that the customer would like to have included in the system but will impact the scope, budget, or schedule of the project. The SDLC provides an iterative approach where requirements are further defined and changes to the system are anticipated to some extent. For larger changes, a more formal change request process should be followed.
	
	Change requests are managed by a process that includes prioritizing the request, estimating the amount of work required to include the request in the system, and setting expectations regarding when the change request work will be scheduled. Change requests require the re-initiation of the unit testing, deployment, and detailed testing cycle.
		- Project Charter
		- Communication Plan
		-Project Plan
			-Updated project plan
			-Risks, issues, and change requests in Clarity
			-Action items in SharePoint
				Project Manager (Owner)
				AFM
				Portfolio Management Office
					The PMO Monthly Checklist is a good guide for monitoring and controlling a project.
					
					PMO Monthly Checklist
					
					AITS Intranet:
					
					Documentation Library > Methodology > Project Management Lifecycle > Guides > UpdatingAProject-PMOChecklist.pdf
					
					In addition, please see the course materials available in the the Sharepoint Document Library.
					
					AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle

Analysis Phase



Phase 4.1 – Analysis

The purpose of the Analysis Phase is to define and document the functional requirements and begin designing the system; this includes defining the business rules for the application and reflecting those rules within the Application Design Document. The Development Working Group (DWG) works with the development team to define the development strategy and identify the standard and approved architectural components and services to be used. If the application requires a deviation from architectural standards or would benefit from additional architectural input, then the Analyst will work with the EAC to schedule a review and use existing documents such as the Application Design Document for the review. Testing and training strategy documents will be developed and the Application Deployment Plan will continue to be refined. Security will be reviewed from both an application standpoint as well as access needs for the project team.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Define Business Rules	General business rules will be gathered and defined for the system. These rules will reflect business processes and policies that must be supported through the various components of the application. Each rule has a unique identifier and will be referenced in the Application Design Documents. The business rules will define both the rules that are within the scope of the project and those rules that are outside of the scope of the project and handled elsewhere. For smaller applications, the business rules may just be defined within the Application Design Document.	- Project Proposal - Project Charter	- Business Rules Document	Analyst (Owner) Customer	Business Rules Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > BusinessRulesTemplate.xlsx
Business Rule Review	A review of the business rules will be held to review the completeness and understanding of the business rules. The rules will be reviewed by the analysts and developers to ensure their ability to translate the business rules into concise specifications.	- Business Rules Document	- Business Rules Document	Analyst (Owner) Customer Development	
Conduct DWG Design Collaboration	The Development Working Group (DWG) Design Collaboration is intended to work with developers and analysts to determine design options and guide the design of the technical solution for the project to meet system and architectural standards at AITS. The DWG is comprised of senior application developers, architects, EAI, ICC members, and analysts, and looks to leverage reusability of components and services. The DWG helps to control the introduction of new technology and methods into the developer toolkit. The DWG will also work with the EAC (Enterprise Architecture Committee) to put projects through the appropriate process. Members of the EAC meet with analysts to determine if the projects require any monitoring or active involvement by the EAC.	- Application Design Document	- Application Design Document	Development (Owner) Analyst Development Working Group (DWG)	DWG Charter AITS Intranet: Documentation Library > Methodology > SDLC > Guides > DWGCharter.docx
Develop Application Design	The documentation of functional requirements for the project is a collaborative effort involving analysts, developers, and key client personnel. This document is initially built during this phase and is iteratively enhanced with more detailed information throughout the development life cycle.	- Project Proposal - Project Charter - Business rules - DWG/EAC review	- Application Design Document	Analyst (Owner) Development Customer	Application Design Template

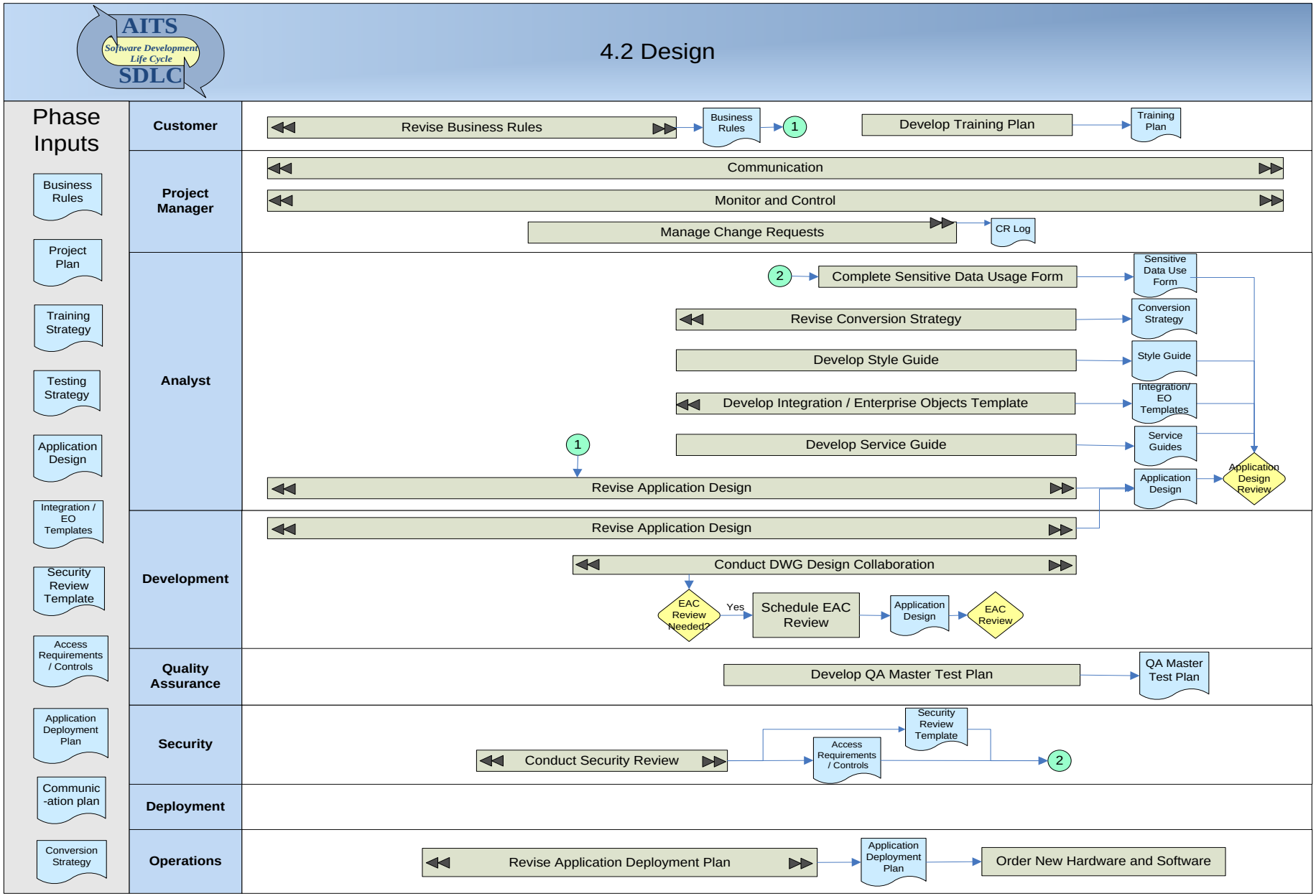
Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	Functional requirements will be documented in an Application Design Document that includes the following components: • Application Overview - A high level overview of business processes and business requirements. • Application Flow Diagram - Displays impacts and actions for all processes involved in the design. • User Access + Security - Specifies the various user groups that can access the application. • Design Specifications - Detailed design for Web Applications, Batch Applications, and Reports. • Data Dictionary - Provides a description of the data for each input retrieved from a database table and output written to a database table.	results			AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ApplicationDesignTemplate.docx
Develop Integration Overview/ Enterprise Objects (EO) Template	If it is determined that the application requires development of new EAI integrations or new versions of existing integrations, Integration Overview Templates will be produced for each new integration. If the integration requires new enterprise objects to be produced, templates will be started which will help identify and define the enterprise objects.	- Application Design Document	- Integration Overview Template - Enterprise Objects Template	Analyst (Owner) Development	Integration Overview Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > IntegrationOverviewTemplate.docx EO Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > EnterpriseObjectTemplate.docx
Develop Conversion Strategy	Some implementations will require the conversion of data from existing systems into the new system. During the Analysis and Design phases, the source systems will be identified, the data selection criteria will be determined and crosswalk s and business logic will be designed. The acceptance criteria for the conversion will also be established with the customer.	- Project Proposal - Project Charter - Business rules - Application Design	- Conversion Strategy	Analyst (Owner) Development Project Manager	Conversion Process Guide AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides > ConversionProcessGuide.docx
Conduct EAC Review	If it is determined that the EAC needs to be involved in a project, the analyst will present the project at a regularly scheduled EAC meeting.	- Application Design Document	- Application Design Document	Analyst (Owner) Architecture Project Manager Development Security	
Conduct Security Review	The storage, handling, and usage of sensitive data, such as (but not limited to) Social Security Numbers, will be examined to prevent data exposure. As	- Application Design Document	- Security Review Template	Analyst (Owner) Project Manager	Security Review Template

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	sensitive data usage is identified, appropriate departmental approvals will be obtained and functionality will be added to the application to minimize the data exposure. If SSN is being used, review and approval by the University SSN Committee is required. Data storage, handling and usage requirements are documented in the Security Review Template.	- Business Rules		Security Business Owners	AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityReviewTemplate.docx
Conduct Baseline Access Control Review	Access requirements to the different environments (databases, linux, unix, etc.) should be identified early in the project. This includes new accounts that need to be created, how access will be granted in development, QA, production, etc. and any access logs that are delivered or need to be created. Controls should also be reviewed at this time, including vendor-delivered controls, detective and/or corrective controls.	- Application Design Document	- Access Requirements Template - Access Control Template	Analyst (Owner) Project Manager Security	Access Requirements Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityAccessRequirementsTemplate.doc Baseline Access Control Review Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityBaselineAccessControlReviewForApplications.docx
Conduct Application Design Review	The Application Design and Business Rules will be examined for completeness; adherence to scope; and that client needs have been met. Any deficiencies will be addressed to avoid rework later in the project.	- Application Design Document - Business Rules	- Revised Application Design Document	Analyst (Owner) Project Manager Development Customer	
Develop Training Strategy	The training strategy will define training objectives, roles, and responsibilities. Additionally, the type of training, schedule, references, dependencies and type of materials that will be required will be identified during this stage. This is a high level description with specific details to be added in a later process.	- Project Charter - Business Rules - Application Design Document	- Training Strategy	Project Manager (Owner) Training Team Customer	Training Strategy Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > TrainingStrategyTemplate.docx
Develop Testing Strategy	The testing strategy will identify the approach, goals, timeline, participants, needs, and dependencies The strategy will define the overall goals and execution but will leave the specific details to be defined in a later process.	- ITPC Template - Application Design Document	- Testing Strategy	Project Manager (Owner) Customer Analyst QA team	Testing Strategy Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > TestingStrategyTemplate.docx

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Revise Application Deployment Plan	The initial Application Deployment Plan should be reviewed and updated as needed. The new hardware and software requirements should be reviewed and compared to the ITPC hardware/software template requirements. Additional costs should be communicated back.	- Application Deployment Plan	- Application Deployment Plan	Deployment (Owner) Development Analyst	Application Deployment Plan AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > pplicationDeploymentTemplate.docx
Communication	The various forums and communication mechanisms identified in the communication plan continue to be performed as the project progresses. As the project moves into new phases, additional types of communication activities may become necessary and activities previously done may need to evolve or be eliminated as participants change or the project focus shifts.	-Communication Plan	-Various communication outputs per the Communication Plan	Project Manager (Owner) Project Team Portfolio Management Office	Templates for various types of meetings as well as guides to using Clarity and SharePoint can be found in the Sharepoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle

Monitor and Control	Throughout the course of a project there are a number recurring activities related to keeping the project on track and making adjustments to the plan when needed. At a minimum, these activities include:
	
	• Managing risks and issues in Clarity
	• Manage change requests
	• Following up on tasks and enforcing schedule
	• Managing action items in SharePoint
	• Updating project plan in Clarity:
	  • Tasks
	  • Resources
	  • Schedule
	Complex or large projects may require additional monitoring effort. The PMO can help in developing reports and tools to keep your project on budget and on schedule.
		- Project Charter
		- Communication Plan
		-Project Plan
			-Updated project plan
			-Risks, issues, and change requests in Clarity
			-Action items in SharePoint
				Project Manager (Owner)
				AFM
				Portfolio Management Office
					The PMO Monthly Checklist is a good guide for monitoring and controlling a project.
					
					PMO Monthly Checklist
					
					AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides > UpdatingAProject-PMOChecklist.pdf

Design Phase



Phase 4.2 – Design

The purpose of the Design Phase is to develop and document detailed technical specifications for the application. The Application Design Document developed during the Analysis phase is further refined and more detail is added to the specification. Other design specifications such as integration templates, style guides, and service guides are produced as well. A master test plan is created that outlines the types of testing that will be needed for the project. An EAC review will be held if determined necessary by the Development Working Group (DWG). A detailed training plan is developed by the customer if the need exists. New hardware and software will be ordered if required by the project.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Revise Application Design Document	The Application Design Document that was started during the Analysis phase will be further refined to provide more technical details regarding the application. The Design Specifications section will be augmented to include detailed edits, business rules, pseudo code, screen action behaviors, frameworks, etc.	- Application Design Document	- Revised Application Design Document	Analyst (Owner) Development	Application Design Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ApplicationDesignTemplate.docx
Revise Business Rules	As designs become more detailed customers may update the business rules for the system. The rules are reflected within the Application Design Documents utilizing the unique identifier or for smaller applications, the rules may be defined directly within the Application Design Document. Major changes or additions of business rules may result in an increased scope of the project. Changes to scope will be handled through the Change Request Management process.	- Business Rules Document - Application Design Document	- Business Rules Document	Customer Analyst (Owner)	Business Rules Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > BusinessRulesTemplate.xlsx
Conduct DWG Design Collaboration	The Development Working Group (DWG) Design Collaboration effort provides continued support from the DWG team to address design issues and changes in design approach. It continues to look to leverage reusability of components and services and help control the introduction of new technology and methods into the developer toolkit. The DWG also recommends proceeding with EAC Reviews when deemed necessary. An EAC Review may be necessary when analysis reveals that a non-standard approach may be required in the construction of the technical solution for the project or the overall complexity of the application warrants a review. When an EAC Review is required, the DWG works with the application developer to determine the appropriate documentation for the EAC Review.	- Application Design Document	- Application Design Document	Development (Owner) Analyst Development Working Group (DWG)	DWG Charter AITS Intranet: Documentation Library > Methodology > SDLC > Guides > DWGCharter.docx
Develop Style Guide	For web applications, a Style Guide is developed which specifies the agreed upon 'look and feel' of the Web components of the system. For application consistency for users, Style Guides from previous systems in that functional area should be used as a starting point. This will help keep application look	- Application Design Document	- Style Guide	Analyst (Owner) Development	Web Application Style Guide AITS Intranet: Documentation Library >

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	and feel consistent for users of multiple applications. When required, a link to this document is included in the ATO.				Methodology > SDLC > Templates and Forms > WebApplicationStyleGuide.docx
Revise Integration Overview / Enterprise Objects (EO) Templates	If it is determined that the application requires development of new EAI integrations or new versions of existing integrations, Integration Templates will be produced for each new integration. If documents were started in the Analysis phase, then they will be revised as the Design phase progresses.	- Integration Overview Template - Enterprise Objects (EO) Template - Application Design Document	- Integration Overview Template - Enterprise Objects (EO) Template	Analyst (Owner) Development	Integration Overview Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > IntegrationOverviewTemplate.docx EO Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > EnterpriseObjectTemplate.docx
Revise Conversion Strategy	Some implementations will require the conversion of data from existing systems into the new system. During the Analysis and Design phases, the source systems will be identified, the data selection criteria will be determined and crosswalk s and business logic will be designed. The acceptance criteria for the conversion will also be established with the customer.	- Project Proposal - Project Charter - Business rules - Application Design	- Conversion Strategy	Analyst (Owner) Development Project Manager	Conversion Process Guide AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides > ConversionProcessGuide.docx
Develop Service Guide	A service is functionality developed by AITS and provided or access granted to customers outside of AITS. Examples of services would be web services, Java Library Files and JMS Objects. Customers of these services usually have their own development staff. As new services are identified during the design process, a service guide will be produced. The Service Guide is used by subscribers of the service and provides the necessary information for accessing and utilizing the service.	- Application Design Document	- Service Implementation Guide	Analyst (Owner) Development	Service Guide Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ServiceGuideTemplate.docx Sample Service Guide AITS Intranet: Documentation Library > Methodology > SDLC > Examples> SAMPLE_ServiceGuide.docx
Conduct EAC Review	An initial or follow up EAC review will be scheduled if required. Changes that result from the meeting will be documented in the Application Design Document.	- Application Design Document	- Application Design Document	Enterprise Architecture Committee (EAC) Analyst (Owner) Project Manager	

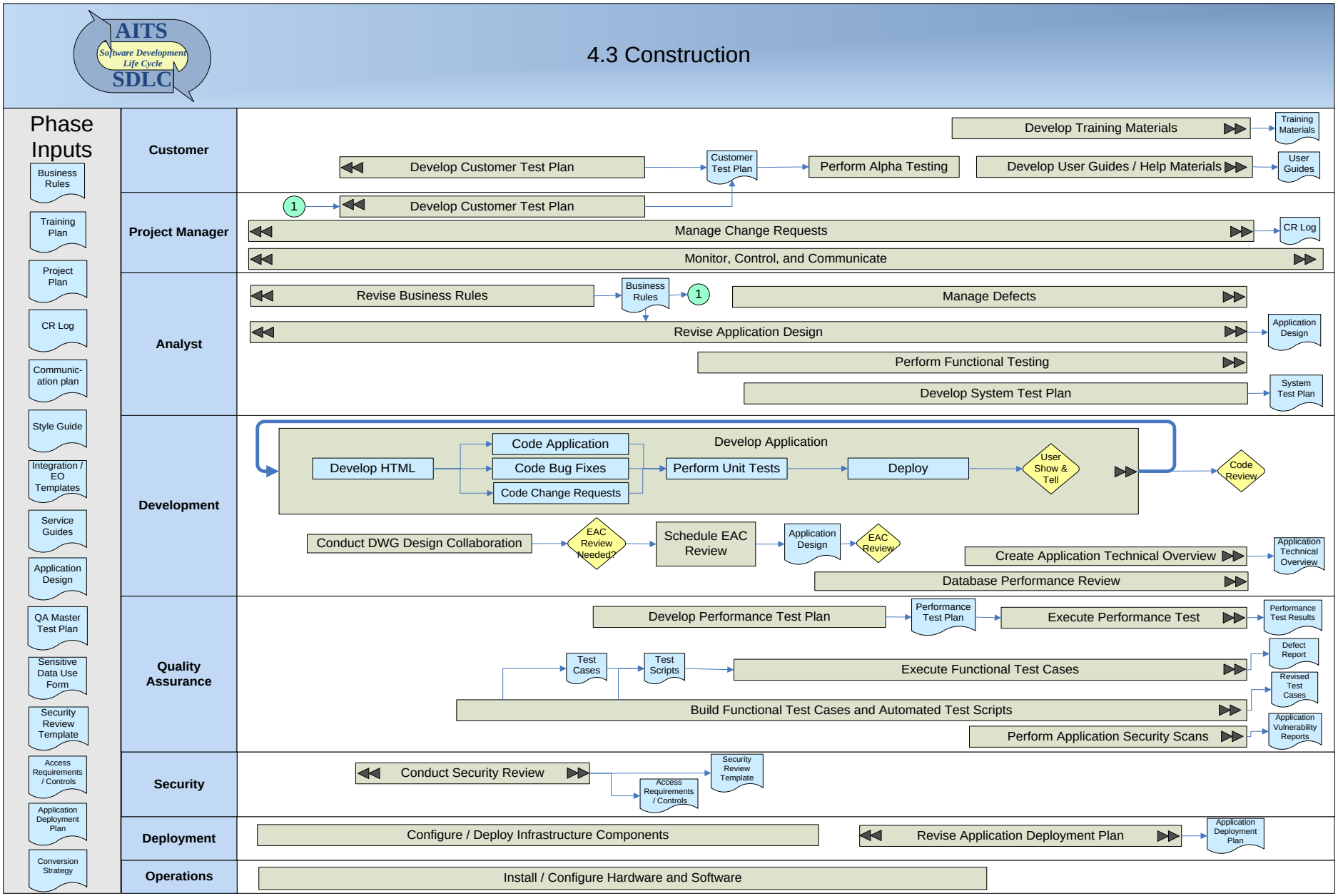
Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
				Development	
Conduct Security Review	An initial review of security requirements may have been started in the Analysis phase. As such, the Security Review, Access Control Review, and Baseline Access Control Review templates should be reviewed and revised if necessary. This process will help identify the storage, handling, and usage of sensitive data, such as (but not limited to) Social Security Numbers, will be examined to prevent data exposure. The findings in this review may facilitate design adjustments. The review will also help establish environment access and request processes needed for project team members in the Development, Test, Training, and pre-production environments.	- Application Design Document - Business Rules		Security Project Manager Analyst (Owner)	Security Review Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityReviewTemplate.docx Access Requirements Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityAccessRequirementsTemplate.doc Baseline Access Control Review Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityBaselineAccessControlReviewForApplications.docx
Complete Sensitive Data Usage Form	If it has been identified that the application is using sensitive data (e.g., SSN) and there are no alternatives to that data, then a SSN Acceptable Use template must be completed and signed by the authorized department head from the customer's unit.	- Application Design Document - Business Rules	- SSN Acceptable Use Template	Analyst (Owner) Security Project Manager	SSN Usage Guidelines AITS Intranet: Documentation Library > Methodology > SDLC > Guides> SSNGuidelinesForAITSDevelopedApplications.docx SSN Acceptable Use Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > AITSApplicationSSNAcceptableUseTemplate.docx
Conduct Design Review	The design will be examined for adherence to existing standards and functional completeness. The review also provides the opportunity to refine	- Application Design Document	- Application Design Document	Analyst (Owner) Customer	

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	the Application Design prior to the beginning of construction. Any deficiencies and refinements will need to be documented and corrected before continuing with the product development.	- Service Guide - Integration Overview Template - Enterprise Objects (EO) Template - Business Rules - Style Guide	- Service Guide - Integration Overview Template - Enterprise Objects (EO) Template	Development Project Manager Quality Assurance Security	
Develop QA Master Test Plan	The Quality assurance team will review and document with the project manager the types of testing that QA has to offer and what will be needed for the specific project. The different types of testing are: • **Functional Test** - verify that the application is functioning according to specifications. • **Regression Test** - test changes in software to make sure other areas of application haven't been impacted. • **Performance Test**: • **Load Testing:** Measures response times, transaction rates, and other time sensitive requirements associated with the application. The goal of Performance testing is to verify that the performance requirements have been achieved. • **Stress Testing:** identifies the peak load the system can handle. It is intended to find errors due to low resources or competition for resources. Low memory or disk space may reveal defects in the software that aren't apparent under normal conditions. • **Volume Testing:** subjects the software to large amounts of data to determine if limits are reached that cause the software to fail. Volume testing also identifies the continuous maximum load or volume the system can handle for a given period of time. • **Configuration Test** - Configuration testing verifies operation of the software on different software and hardware configurations. This would include testing of operating systems and browsers.	- Application Design Document	- QA Master Test Plan	Quality Assurance (Owner) Project Manager	QA Master Test Plan Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > QAMasterTestPlanTemplate.docx
Develop Training Plan	If a need for training has been identified a detailed training plan will be developed based on the functional requirements.	- Training Strategy - Application Design - Business Rules	- Training Plan Document	Customer (Owner)	
Manage Change Requests	Change requests can be generated during code design, construction and various testing processes. Change requests are defined as features or functions that the customer would like to have included in the system but were not included in the specifications in the Application Design Document. Change requests are managed by a process that includes prioritizing the request, estimating the amount of work required to include the request in the system, and setting expectations regarding when the change request work will be scheduled. Change requests require the re-initiation of the unit testing, deployment, and detailed testing cycle.	- Application Design Document	- Change Request Log	Project Manager (Owner) Analyst Customer	Change Request Log AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SoftwareChangeRequestLog.xlsx Change Request Form

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
					AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SoftwareChangeRequestTemplate.xlsx
Revise Application Deployment Plan	The Application Deployment Plan should be reviewed and updated as needed. At this stage the new components section should be fully documented, the new infrastructure components identified and the logistics/delivery plans completed. Also all new hardware should be ordered at this point.	- Application Deployment Plan	- Application Deployment Plan	Deployment (Owner) Development Analyst	Application Deployment Plan AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > pplicationDeploymentTemplate.docx
Order Hardware / Software	The project manager will work with operations to ensure that the hardware and software required for development of the product are ordered.	- Application Deployment Plan	- Hardware / Software Order	Operations (Owner) Project Manager	
Communication	The various forums and communication mechanisms identified in the communication plan continue to be performed as the project progresses. As the project moves into new phases, additional types of communication activities may become necessary and activities previously done may need to evolve or be eliminated as participants change or the project focus shifts.	-Communication Plan	-Various communication outputs per the Communication Plan	Project Manager (Owner) Project Team Portfolio Management Office	Templates for various types of meetings as well as guides to using Clarity and SharePoint can be found in the Sharepoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle

Monitor and Control	Throughout the course of a project there are a number recurring activities related to keeping the project on track and making adjustments to the plan when needed. At a minimum, these activities include:
	
	• Managing risks and issues in Clarity
	• Manage change requests
	• Following up on tasks and enforcing schedule
	• Managing action items in SharePoint
	• Updating project plan in Clarity:
	  • Tasks
	  • Resources
	  • Schedule
	Complex or large projects may require additional monitoring effort. The PMO can help in developing reports and tools to keep your project on budget and on schedule.
		- Project Charter
		- Communication Plan
		-Project Plan
			-Updated project plan
			-Risks, issues, and change requests in Clarity
			-Action items in SharePoint
				Project Manager (Owner)
				AFM
				Portfolio Management Office
					The PMO Monthly Checklist is a good guide for monitoring and controlling a project.
					
					PMO Monthly Checklist
					
					AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides > UpdatingAProject-PMOChecklist.pdf

Construction Phase



Phase 4.3 – Construction

The purpose of the Construction Phase is to build the application program code as specified in the Application Design Document. The construction of the application is done in an iterative fashion with involvement from the customers and analysts who review the application as it is being built and identify issues, gaps, and incomplete business rules through demonstration and actual use of the application. The demonstration of the application with the customers occurs through Show and Tell sessions where developers exhibit the application functionality to the customers. Testing preparation and execution also gets underway as functional test cases, customer test plans, and performance test plans are built and executed during this phase. The testing is performed through functional testing by Quality Assurance and the analysts and then by the customers in Alpha testing. Performance testing and Security Scans are done to initially identify any major issues that need to be addressed quickly in order to minimize potential impacts to the application. In preparation for future phases, the Application Deployment Plan is revised, and the customers begin to develop training materials, user guides, and help materials. An Application Technical Overview (ATO) document is produced that serves to describe the components of the application and link the various design documents and service guides together. The ATO will become a key document used in support of the application in the future. An EAC review will be held if determined necessary by the Development Working Group (DWG) or if it has been previously decided that the application should have periodic EAC touch points.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Install / Configure Hardware and Software	Hardware and software needed to support the project will be installed at this time. This may include hardware for development, test, and production.	- Hardware / Software Order		Operations (Owner)	
Configure and Deploy Infrastructure Components	Infrastructure components will be built to support the application in the operational environment. The various components could include: LDAP, queries, topics, connections, router, proxy, and Tomcat.	- Application Deployment Plan		Deployment (Owner) Operations	
Develop Application	The Development and Unit Test Cycle includes several work components and, as the name implies, is cyclical in nature. • Develop HTML – HTML code is written using the screen mock-ups or wireframes as a guide. • Code Application - Application program code is written by the development team in accordance with the Application Design Document and ADSD coding standards. • Code Bug Fixes – During the code construction and various testing processes, bugs in the application program code may be reported. Bugs are defined as functions within the application program code that do not match the specifications in the Application Design Document. These bugs must be fixed within the application program code as part of the project and within the project timeline. Bug fixes require the re-initiation of the unit testing, deployment, and detailed testing cycle.	- Application Design Document - Application Technical Overview - Style Guides - Service Guides	- Program Code - AppWorx Chains - Code Review Documents - Unit Test Results	Development (Owner) Analyst Customer	Application Development standards AITS Intranet: Departments > ADSD - Application Development and Support > Shared Documents > Development Standards Documentation >

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	• Code Change Requests – As change requests are identified the change is scoped which includes reviewing project timelines, budgets, or staffing levels that may need to be revised in order to accommodate the change. Once approved, the change request is added to the designs and test plans and is coded within the application. • Perform Unit Tests – Individual Application program code components or programs are tested by the development team. As components are successfully tested, related components are tested together prior to QA testing, system testing, or customer testing. • Deploy – As unit testing progresses, the application is deployed to a test or QA environment where in-depth QA or system testing can occur. • Customer Show and Tell – This is an opportunity to show clients the progress being made in the construction of the program code. Feedback from customers during the early stages of the code construction process is critical to creating a system that the customers will be happy with at the conclusion of the project.				
Revise Business Rules	As development and testing get underway, it may be determined that business rules are missing or incorrect. The rules are maintained within the Business Rules Document and are reflected within the Application Design Documents. As rules are changed, added, or removed, the impact is assessed and managed through the Change Request Management process.	- Business Rules Document - Application Design Document	- Business Rules Document	Customer Analyst (Owner)	Business Rules Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > BusinessRulesTemplate.xlsx
Revise Application Design Document	The Application Design Document that was started during the Analysis phase will be updated throughout the development process. As changes or clarifications are made, the document is updated and republished. Any change that impacts the scope of the project must be sent through the Change Request Management process. This document will be used as the standard for determining defects within the Quality Assurance activities.	- Application Design Document	- Revised Application Design Document	Analyst (Owner) Development	Application Design Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ApplicationDesignTemplate.docx
Conduct DWG Design Collaboration	The Development Working Group (DWG) Design Collaboration effort provides continued support from the DWG team to address design issues and changes in design approach. It continues to look to leverage reusability of components and services and help control the introduction of new technology and methods into the developer toolkit. The DWG also recommends proceeding with EAC Reviews when deemed necessary. An EAC Review may be necessary when analysis reveals that a non-standard approach may be required in the construction of the technical solution for the project or the overall complexity of the application warrants a review.	- Application Design Document	- Application Design Document	Development (Owner) Analyst Development Working Group (DWG)	DWG Charter AITS Intranet: Documentation Library > Methodology > SDLC > Guides > DWGCharter.docx
Conduct EAC Review	An initial or follow up EAC review will be scheduled if required. Changes that result from the meeting will be documented in the Application Design Document.	- Application Design Document	- Application Design Document	Enterprise Architecture Committee (EAC) Analyst (Owner) Project Manager Development Security	
Conduct Security	Security reviews began in the Analysis phase and has continued through	- Application Design		Security	Security Review Template

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Review	Design and into Construction. The review continues to review the handling and management of sensitive data, access and authorizations built into the system and during construction will review any vulnerabilities that are identified and can't be resolved. The findings in this review may facilitate design adjustments.	Document - Business Rules - Application Vulnerability Reports		Project Manager Analyst (Owner)	AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityReviewTemplate.docx Access Requirements Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityAccessRequirements Template.doc Baseline Access Control Review Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityBaselineAccessControlReviewForApplications.docx
Perform Code Review	The purpose of code reviews is to ensure that the code written by application development is of high quality and that it adheres to ADSD coding standards. Code reviews are usually held near the end of unit testing, but they may be held at any stage of the code construction process, depending on the complexity of the code. Code review notes contain information about what was found during the code review, what code needs to be fixed, and confirmation that the coding changes were completed.	- Program Code - AppWorx Chains - Unit Test Results	- Add code review notes to Application Design Document	Development (Owner) Analyst Security	Application Walkthrough Guidelines AITS Intranet: Documentation Library > Methodology > SDLC > Guides > AITSDevelopmentWalkThroughGuidelines.rtf
Develop Application Technical Overview	The Application Technical Overview will provide a link to the Application Design Document and other technical design documents that are needed to develop the application. • Application Design Document – A product of the Analysis Phase, the Application Design Document includes an overview of the application, a high-level project timeline, an application flow diagram, user access/security, design specifications, a data dictionary, and other information critical to the proper understanding of the application that is to be built. A link to this document is included in the ATO. • System Requirements – This section of the ATO includes information	- Application Design Document - Style Guides - Service Guides	- Application Technical Overview	Development (Owner) Analyst	Application Technical Overview Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ApplicationTechnicalOverviewTemplate.docx

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	about the internal architecture of the application, as well as the required versions of Java, Tomcat, AppWorx, and Oracle. • Reusable Components – This section of the ATO identifies components that can be reused in this application or that can be added to the internal framework so that the component can be reused across applications. • Data Model + Schemas – This section of the ATO identifies the location of the Data Model and specifies the database and schemas. • Screen Mock-Ups – This section of the ATO includes a link to the screen mock-ups or wireframes for the Web components of the system. • Reports – This section of the ATO includes a list of the reports, with a brief description, required for the system. When required, a link to the report specifications document is included. • Accessibility Review Document – The Accessibility Review Document is the summation of the customer accessibility requirements for the Web components of the system. When required, a link to this document is included in the ATO. • Integration Template – The Integration Template is a required deliverable from integration analysis. When required, a link to this document is included in the ATO. • Service Guide - When required, a link to this document is included in the ATO. • Sensitive Data Usage Form – The Sensitive Data Usage Form identifies sensitive data that must be used within the system and specifies the reasons why the sensitive data must be used. When required, a link to this document is included in the ATO.				
Build QA Functional Test Cases and Automated Test Scripts	The Testing Team will develop detailed test cases that will identify the business rules and functionality of the application that should be tested. These test cases should be reviewed by the AITS Analyst assigned. Automated test scripts can be developed when the development of the application is almost complete. These test scripts will be utilized in the future for regression testing.	- Application Design Document - Business Rules	- Test Cases - Automated Test Scripts	Quality Assurance (Owner) Analyst	QA Mater Test Plan Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > QAMasterTestPlanTemplate.docx QA Test Management Tool Testers Guide AITS Intranet: Documentation Library > Methodology > SDLC > Guides > QA_TestManagementTool_TestersGuide.docx
Execute Functional Test Cases	The Testing Team will execute the tests that were developed to test the business rules and functionality of the application. The test results will be documented and defects will be filed.	- Test Cases - Test Scripts	- Revised Test Cases	Quality Assurance (Owner) Analyst Development	QA Test Management Tool Testers Guide AITS Intranet:

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
				Customer	Documentation Library > Methodology > SDLC > Guides > QA_TestManagementTool_TestersGuide.docx
Develop System Test Plan	A system test plan will identify the high level activities necessary to complete an overall end-to-end test of the system. Factors such as database prep, set-up configuration, development timelines, processing requirements and the timing of Dress Rehearsals need to be taken into consideration as the plan is developed. Additional, detailed scenarios may need to be created, in addition to the overall test plan.	- Application Design Document	- System Test Plan	Analyst (Owner)	Guide for System Test Plans AITS Intranet: Documentation Library > Methodology > SDLC > Guides > SystemTestingOutline.docx
Perform Functional Testing	As software completes unit testing, it is turned over to the analysts to perform Functional Testing of the application. The testing is performed to measure compliance to specifications and business rules as well as adherence to specifications. As issues are identified, they are communicated back to the developer and tracked in the Defect and Change Request Management systems. This round of Functional Testing is done in preparation of hand-off to the customers for testing.	- Business Rules - Application Design Document - System Test Plan		Analyst (Owner) Development	Functional Test Plan AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > Functional_Test_Plan_Template.xlsx
Develop Performance Test Plan	If performance testing is required for a project, the following needs to be identified and documented: ○ Purpose of the performance test ○ URL of the application to test ○ Exact steps that a user of the application would do in production do ○ Database that will be used for the test and what type of access QA will need ○ Number of concurrent users ○ Number of user Login IDs needed for test ○ Determine how test environment hardware compares to production ○ Determine Acceptance Criteria QA will develop automated performance test scripts based on the requirements specified in the performance test plan.	- Requirements for Performance Test	- Performance Test Plan - Performance Test Scripts (automated)	Quality Assurance (Owner) Project Manager Analyst	Performance Test Questions AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > QAPerformanceTestQuestions.docx
Execute Performance Test	Performance testing is done to ensure that the application performs under peak volume times as periods of high load. The testing can be broken down into these components: Load Testing: Measures response times, transaction rates, and other time sensitive requirements associated with the application. The goal of Performance testing is to verify that the performance requirements have been achieved. Stress Testing: is intended to find errors due to low resources or competition for resources. Low memory or disk space may reveal defects in the software that aren't apparent under normal conditions. Other defects might results	- Performance Test Plan - Performance Test Scripts (automated)	- Performance Test Results	Quality Assurance (Owner) Operations	

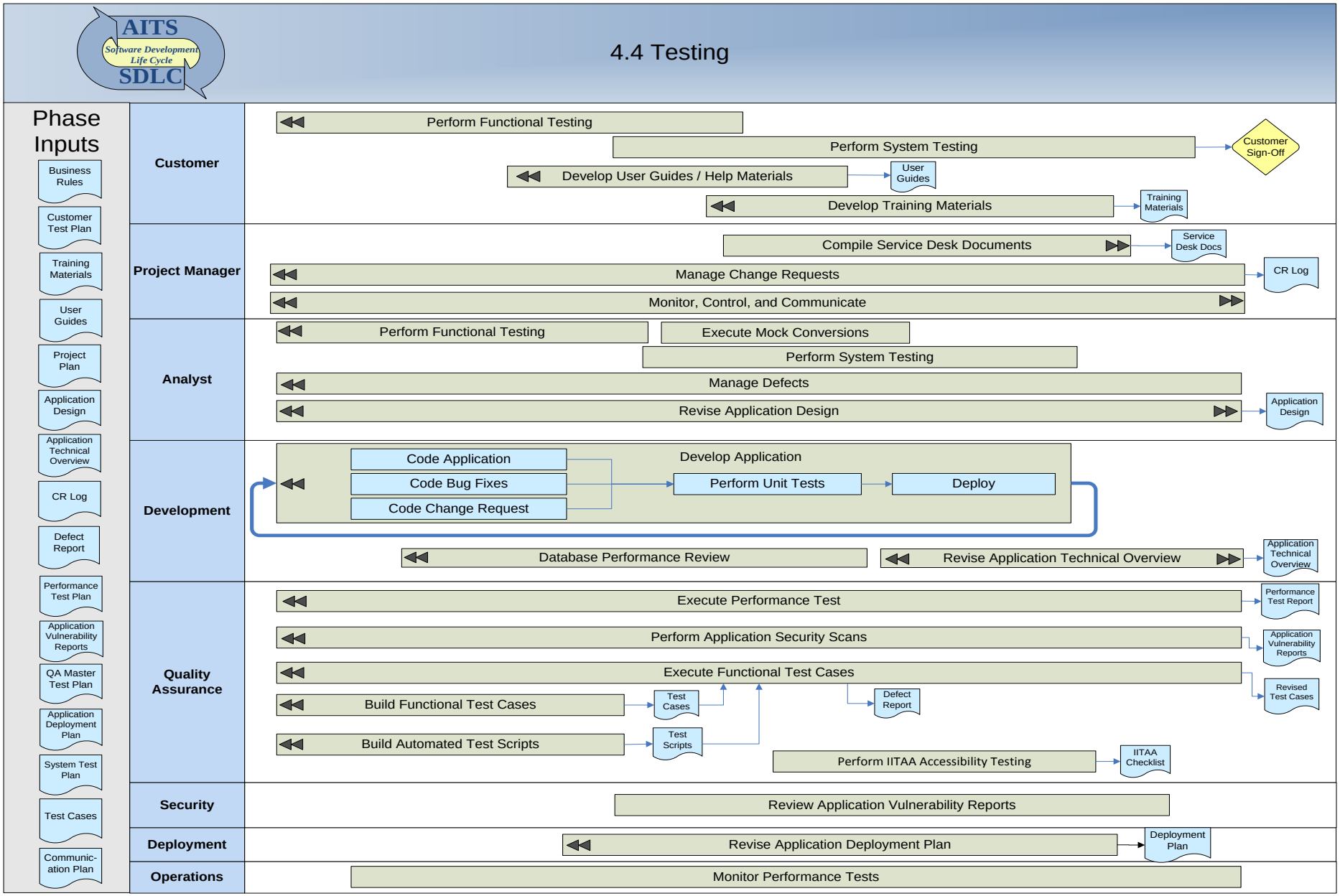
Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	from competition for shared resource like database locks or network bandwidth. Stress testing identifies the peak load the system can handle. Volume Testing: subjects the software to large amounts of data to determine if limits are reached that cause the software to fail. Volume testing also identifies the continuous maximum load or volume the system can handle for a given period of time. For example, if the software were processing a set of database records to generate a report, a Volume Test would use a large test database and check that the software behaved normally and produced the correct report.				
Database Performance Review	During the process of testing, DBAs should enable monitors and perform traces to look for any SQL statements which are poor performing and could cause performance issues for the application or compromise the database. The DBA's generate and review reports of the most resource intensive statements and notify developers of potential problems and possible tuning options. The analyst, lead QA tester, or lead developers should notify the DBA team when heavy testing will commence so that the monitoring can be put in place.	Execution of test plans	Performance Problem Notifications	Development (Owner) Quality Assurance Analyst	
Perform Application Security Scans	Security testing is performed utilizing the AppScan software tool to check for system vulnerabilities exposed by web applications. The Development team will analyze the application vulnerabilities and Operations will analyze the infrastructure vulnerabilities. All High and Medium vulnerabilities should be resolved prior to implementation into production. The security group will review the impact and risk of any medium or high vulnerabilities that cannot be resolved prior to implementation in production. For any scans conducted on vended or partner systems, there are considerations that must be taken as to the impact and damage that could be the result of the scan.	- Application Technical Overview	- Application Vulnerability Reports	Quality Assurance (Owner) Security Development Operations	Security Scanning Procedure AITS Intranet: Documentation Library > Methodology > SDLC > Guides> Vulnerability Scans > WebAppSecurityScanningProcess.docx AppScan Testers Guide AITS Intranet: Documentation Library > Methodology > SDLC > Guides> Vulnerability Scans > AppScan_TestersGuide.docx Customer Requirements and Considerations AITS Intranet: Documentation Library > Methodology > SDLC > Guides> Vulnerability Scans > AppScanTestingConsiderationsAndRequirements.docx
Develop Customer Test Plan	The customer will create a detailed test plan that will be used during testing of the application. An essential element of the customer test plan is the establishment of software acceptance criteria.	- Application Design Document	- Customer Test Plan	Customer Project Manager (Owner) Analyst	Customer Test Plan AITS Intranet:

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
					Documentation Library > Methodology > SDLC > Templates and Forms > Customer_Test_Plan_Template.xls
Manage Defects	As defects are identified through testing, the defects are entered into a tracking system where the steps to produce the defect are documented. Each defect is uniquely identified and assigned a priority and a status. As Developers correct a defect, the defect is retested and the status is appropriately updated based upon the results. Quality Assurance utilizes a formal defect management tools that is shared with analysts and developers. For projects which do not go through Quality Assurance, the defects are manually tracked.	- Application Design Document	- Defect Report	Analyst (Owner) Quality Assurance Project Manager	QA Test Management Tool Users Guide AITS Intranet: Documentation Library > Methodology > SDLC > Guides > QA_TestManagementTool_UsersGuide.docx QA Defect and Issue Workflow AITS Intranet: Documentation Library > Methodology > SDLC > Guides > QAToolIssueWorkFlow.vsd
Execute Alpha Test	After the analysts have done an initial round of testing, this is the customer's first opportunity to test the application and identify defects.	- Customer Test Plan		Customer (Owner) Analyst	
Develop Training Materials	Training materials will be created for use in customer training sessions.	- Training Plan Document - Application Design Document	- Training Materials	Customer (Owner) Project Manager	
Develop User Guides / Help Materials	User Guides and help materials will be created to aid in use of the product. Common features and actions should be documented to allow the customer to look at a reference material rather than reading the complete documentation.	- Application Design Document	- User Guides	Customer (Owner)	
Revise Application Deployment Plan	The Application Deployment Plan should be reviewed and updated as needed. The work on the "Deployment Forms Checklist" section should begin at this stage and t the developer begin building the migration documents. Work on the Rollout plan should also begin in this phase.	- Application Deployment Plan	- Application Deployment Plan	Deployment (Owner) Development Analyst	Application Deployment Plan AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > pplicationDeploymentTemplate.docx
Communication	The various forums and communication mechanisms identified in the communication plan continue to be performed as the project progresses. As the project moves into new phases, additional types of communication activities may become necessary and activities previously done may need to	-Communication Plan	-Various communication outputs per the Communication Plan	Project Manager (Owner) Project Team Portfolio Management Office	Templates for various types of meetings as well as guides to using Clarity and SharePoint can be found in

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	evolve or be eliminated as participants change or the project focus shifts.				the Sharepoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle

Monitor and Control	Throughout the course of a project there are a number recurring activities related to keeping the project on track and making adjustments to the plan when needed. At a minimum, these activities include:
	
	• Managing risks and issues in Clarity
	• Manage change requests (see note below)
	• Following up on tasks and enforcing schedule
	• Managing action items in SharePoint
	
	• Updating project plan in Clarity:
	  • Tasks
	  • Resources
	  • Schedule
	Complex or large projects may require additional monitoring effort. The PMO can help in developing reports and tools to keep your project on budget and on schedule.
		- Project Charter
		- Communication Plan
		-Project Plan
			-Updated project plan
			-Risks, issues, and change requests in Clarity
			-Action items in SharePoint
				Project Manager (Owner)
				AFM
				Portfolio Management Office
					The PMO Monthly Checklist is a good guide for monitoring and controlling a project.
					
					PMO Monthly Checklist
					
					AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides > UpdatingAProject-PMOChecklist.pdf

Testing Phase



Phase 4.4 – Testing

The purpose of the Testing phase is to have Quality Assurance, the analysts, and the customers engage in full end-to-end testing of the application to make sure that it functions as specified. Testing was initially started in the Construction phase and focused on ensuring that the major functionality was generally working and that there were no significant deficiencies in the specifications, performance, or security of the application. The testing that occurs in the Testing phase is a more rigorous with emphasis on verifying that the application meets the customers' needs for production. The types of testing that occur include functional testing of the components performed first by Quality Assurance and the analysts and then the customer; system testing of the components as they work together and interact with other systems; performance testing to ensure that the application is able to properly function during periods of high demand or load; security testing to eliminate any vulnerabilities within the application that may compromise the system or expose data to theft or loss; and accessibility testing to verify that the application meets the Illinois Information Technology Accessibility Act (IITAA) standards. These testing efforts are iterative and overlapping in nature and do not occur sequentially. As issues are discovered, they are categorized as either defects or change requests to the system. Defects indicate that the application is not functioning as specified whereas change requests indicate that the system needs to be enhanced to either provide additional functionality or modification to the functionality as defined. The amount of development work during this phase should be minimized as much as possible in order to stabilize the product. The Customers also utilize this time to finish building user guides and training materials.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Build QA Functional Test Cases	The effort started during the Construction Phase to build functional test cases continues into the Testing Phase. The functional test cases feed into the functional testing performed by the Quality Assurance team.	- Application Design Document - Business Rules	- Test Cases	Quality Assurance (Owner) Analyst	QA Mater Test Plan Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > QAMasterTestPlanTemplate.docx QA Test Management Tool Testers Guide AITS Intranet: Documentation Library > Methodology > SDLC > Guides > QA_TestManagementTool_TestersGuide.docx

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Build Automated Test Scripts	The QA Specialist will be responsible for developing automated test scripts to be used for regression tests in the future. A regression test is a test is done to ensure that enhancements made or bug-fixes do not introduce new errors into an application.	- Application Design Document - Business Rules - Application Technical Overview	- Automated Test Scripts	Quality Assurance (Owner)	
Execute QA Functional Test Cases	This effort is started during the Construction Phase. The Testing Team will execute the tests that were developed to test the business rules and functionality of the application as defined by the specifications. The test results will be documented and defects will be filed. The QA functional testing should be complete or at least well underway prior to the customer beginning their functional testing. The Testing Team will continue to execute functional tests as changes and fixes are put into the application. The customer should not be testing code that has not gone through QA.	- Test Cases - Test Scripts	- Test Cases	Quality Assurance (Owner) Analyst Development Customer	QA Test Management Tool Testers Guide AITS Intranet: Documentation Library > Methodology > SDLC > Guides > QA_TestManagementTool_TestersGuide.docx
Perform IITAA Accessibility Testing	Applications developed by the University must adhere to the guidelines established by the Illinois Information Technology Accessibility Act (IITAA). Quality Assurance and Development review the application screens for adherence to the guidelines and issues found are submitted as defects. This review includes manual review of the HTML as well as navigating the application using a screen reader tool.	- Application Design Document	- IITAA Test Case Checklist	Quality Assurance (Owner) Developer	Accessibility Development Process Overview AITS Intranet: Documentation Library > Methodology > SDLC > Guides > ApplicationAccessibilityDevelopmentProcess_Overview.docx QA IITAA Validation Process AITS Intranet: Documentation Library > Methodology > SDLC > Guides > QA_IITAA_TestingValidation.doc QA IITAA Application Checklist AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > QA_IITAA_AccessibilityChecklist.xls
Execute Mock Conversions	For systems requiring data to be converted from other systems into the new system, mock conversions are executed to populate the new system with converted data. This data should be used for testing of functionality as well as for conversion verification. A series of mock conversions are executed in	- Conversion Strategy - Application Design Document	- Conversion results	Analyst (Owner) Customer Development	Conversion Process Guide AITS Intranet: Documentation Library >

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	order to improve the data quality of the conversion and to practice the process of executing the various scripts, programs, manual data entry, and conversion reconciliation.				Methodology > Project Management Lifecycle > Guides > ConversionProcessGuide.docx
Perform Customer Functional Testing	As QA wraps up execution of the QA Functional Test Cases, the analyst completes initial functional testing of the application, the customer then begins their functional testing. As in the previous phase, the testing is performed to measure compliance to specifications and business rules as well as adherence to specifications. As issues are identified, they are communicated back to the developer and tracked in the Defect and Change Request Management systems.	- Business Rules - Application Design Document	-Customer Test Plan	Customer (Owner) Analyst Development	QA Tool Users Guide AITS Intranet: Documentation Library > Methodology > SDLC > Guides > QA_TestManagementTool_UsersGuide.docx
Execute Performance Test	As started during the Construction Phase, the Performance Testing of the application continues. As the testing continues, issues found are addressed by Development and Operations. The Customer reviews test results and at the end of the testing cycle acknowledges that system performance is acceptable.	- Performance Test Plan - Performance Test Scripts (automated)	- Test Results and Approval	Quality Assurance (Owner) Analyst Customer Operations	
Monitor Performance Tests	The Operations team monitors the system during performance tests executed by the Quality Assurance team. Key factors such as memory and CPU utilization, process counts, and system general health are monitored as the tests occur.	- Performance Test Plan	- Test Results and Customer Review	Quality Assurance (Owner) Operations Development	
Database Performance Review	During the process of testing, DBAs should enable monitors and perform traces to look for any SQL statements which are poor performing and could cause performance issues for the application or compromise the database. The DBA's generate and review reports of the most resource intensive statements and notify developers of potential problems and possible tuning options. The analyst, lead QA tester, or lead developers should notify the DBA team when heavy testing will commence so that the monitoring can be put in place.	Execution of test plans	Performance Problem Notifications	Development (Owner) Quality Assurance Analyst	
Perform Application Security Scans	The security testing that started during the Construction Phase continues and is completed during the Testing Phase. All high and medium vulnerabilities will be corrected prior to production deployment. Any high or medium vulnerabilities that are not able to be resolved prior to implementation must be evaluated and approved as determined by Security, Project Management, and Development.	- Application Technical Overview	- Security Scan Reports	Quality Assurance (Owner) Security Development Operations	Security Scanning Procedure AITS Intranet: Documentation Library > Methodology > SDLC > Guides> Vulnerability Scans > WebAppSecurityScanningProcess.docx AppScan Testers Guide AITS Intranet: Documentation Library > Methodology > SDLC > Guides> Vulnerability Scans > AppScan_TestersGuide.docx Customer Requirements and

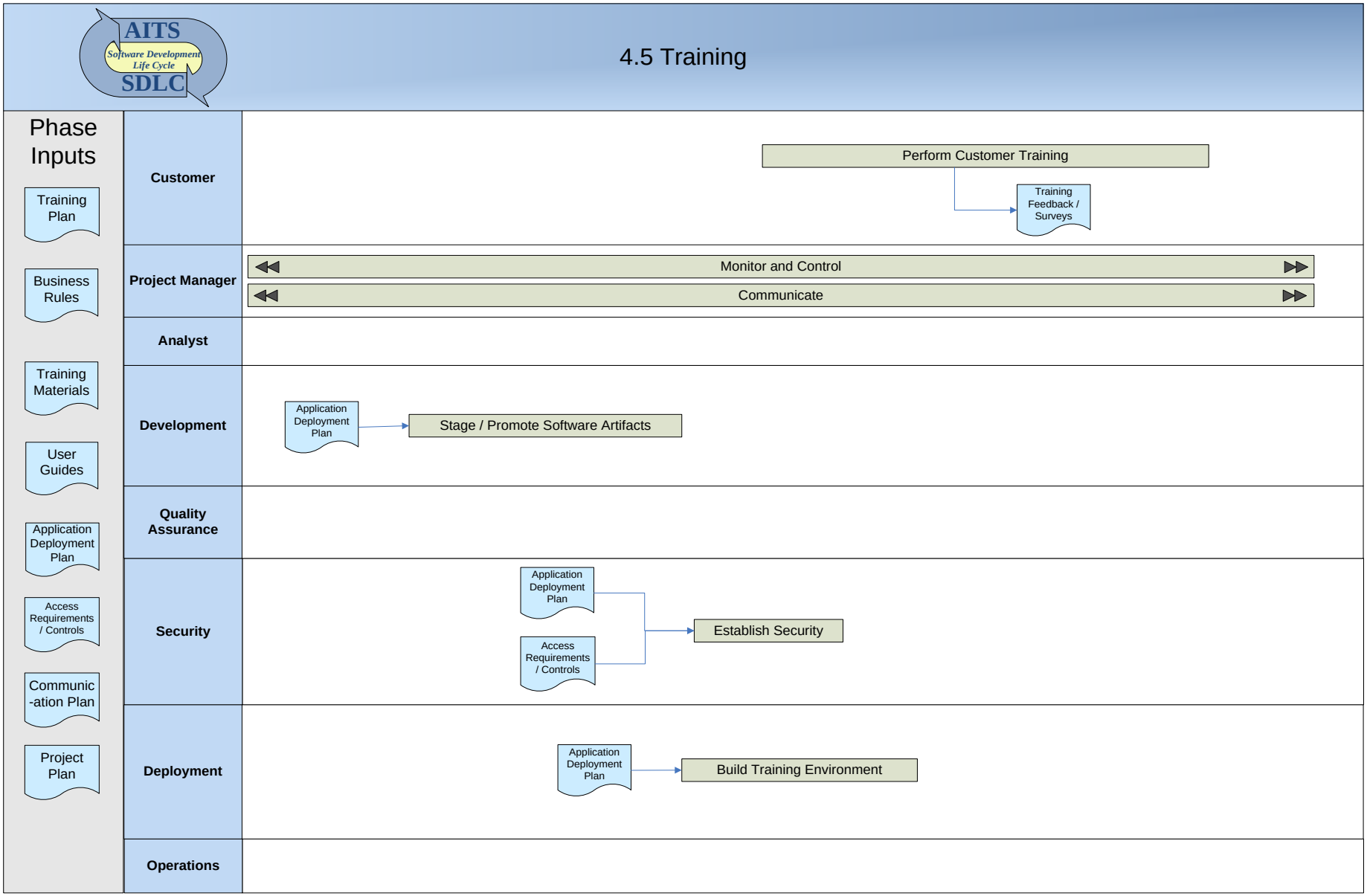
Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
					Considerations AITS Intranet: Documentation Library > Methodology > SDLC > Guides> Vulnerability Scans > AppScanTestingConsiderationsAndRequirements.docx
Review Application Vulnerability Reports	The Security team reviews the results of the Security Scans that are done. The Security team provides input and assistance in prioritizing vulnerability fixes as well as collaboration in identifying false positives.	- Application Technical Overview	- Security Scan Reports	Quality Assurance (Owner) Devlopment Security	
Manage Defects	The Defect Management Process started during the Construction phase is continued during the Testing phase. Defects will continue to be classified and fixed as prescribed. The defects remaining at the conclusion of the Testing phase will be reviewed and used by the Customers as part of the criteria in determining if the system is ready to proceed. In general, no "critical" or "high" defects should be allowed to exist in the system as it is deployed into production.	- Application Design Document	- Defect Report	Analyst (Owner) Quality Assurance Project Manager Development Customer	QA Test Management Tool Users Guide AITS Intranet: Documentation Library > Methodology > SDLC > Guides > QA_TestManagementTool_UsersGuide.docx QA Defect and Issue Workflow AITS Intranet: Documentation Library > Methodology > SDLC > Guides > QAToolIssueWorkFlow.vsd
Revise Application Design Document	The Application Design Document that was started during the Analysis phase will be updated throughout the development process. As changes or clarifications are made, the document is updated and republished. Any change that impacts the scope of the project must be sent through the Change Request Management process. This document will be used as the standard for determining defects within the Quality Assurance activities.	- Application Design Document	- Revised Application Design Document	Analyst (Owner) Development	Application Design Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ApplicationDesignTemplate.docx
Develop Application	The Development and Unit Test cycle continues throughout the Testing phase as defect corrections and change requests are placed into the code base.	- Application Design Document - Application Technical Overview - Style Guides - Service Guides	- Program Code - AppWorx Chains - Code Review Documents - Unit Test Results	Development (Owner) Analyst Customer	Application Development standards AITS Intranet: Departments > ADSD - Application Development and Support > Shared Documents > Development Standards Documentation >

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Perform System Test	A Systems Test is both functional and technical in nature. This is "end to end" testing verifying proper operation of the application in a simulated environment. The goal is to ensure that the new or modified application has not detracted or negatively impacted the overall system or service offered. A formal customer acceptance test plan may be desired for projects of a larger size and complexity. Typically AITS staff will gather with customers in a room and conduct structured functional tests of the new software. The duration of the testing may last anywhere from several hours to several days. At culmination of the testing the intent is to receive a sign-off from the customers that the software is ready for production.	- System Test Plan	- Test Results	Analyst (Owner) Development Customer	Guide for System Test Plans AITS Intranet: Documentation Library > Methodology > SDLC > Guides > SystemTestingOutline.docx
Revise Application Technical Overview	The Application Technical Overview will be updated as a result of changes that occurred during the Testing Phase.	- Application Technical Overview	- Revised Application Technical Overview Document	Development (Owner) Analyst	Application Technical Overview Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ApplicationTechnicalOverviewTemplate.docx
Develop User Guides / Help Materials	The User guides and help materials that were started during the Construction Phase will continue to be developed by the Customers.	- Business Rules - Application Design Document	- User Guides	Customer (Owner)	
Develop Training Materials	Training material creation for use in customer training sessions continues from the construction phase.	- Business Rules - Training Plan Document - Application Design Document	- Training Materials	Customer (Owner) Project Manager	
Obtain Customer Sign-off	The customer reviews the results from the various testing efforts to confirm that the system functions to specification and performs adequately. Sign-off at this point allows the application to move into the Training Phase.	- Test Results	- Sign-off	Project Manager (Owner) Customer	
Revise Application Deployment Plan	The Application Deployment Plan should be reviewed and updated as needed. The Rollout Plan that was initially built during the Construction Phase is augmented as development and testing continue throughout the Testing Phase.	- Application Deployment Plan	- Application Deployment Plan	Deployment (Owner) Development Analyst	Application Deployment Plan AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > pplicationDeploymentTemplate.docx
Compile Service Desk Documents	In preparation for eventual deployment, the artifacts needed by the Service Desk for support of the application will start to be compiled. The items include chain notes, service ticket queues, FAQ's and knowledge documents, as well as a general overview of the application and any other special support documents.	- Application Deployment Plan - Application Design Document	- Chain notes - Knowledge Docs - FAQ's	Project Manager (Owner) Analyst Deployment	Application Deployment Plan AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > pplicationDeploymentTemplate.docx
Manage Change	Change requests can be generated during code design, construction and	- Application Design	- Change Request Log	Project Manager	Change Request Log

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Requests	various testing processes. Change requests are defined as features or functions that the customer would like to have included in the system but were not included in the specifications in the Application Design Document. Change requests are managed by a process that includes prioritizing the request, estimating the amount of work required to include the request in the system, and setting expectations regarding when the change request work will be scheduled. Change requests require the re-initiation of the unit testing, deployment, and detailed testing cycle.	Document		(Owner) Analyst Customer	AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SoftwareChangeRequestLog.xlsx Change Request Form AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SoftwareChangeRequestTemplate.xlsx
Communication	The various forums and communication mechanisms identified in the communication plan continue to be performed as the project progresses. As the project moves into new phases, additional types of communication activities may become necessary and activities previously done may need to evolve or be eliminated as participants change or the project focus shifts.	-Communication Plan	-Various communication outputs per the Communication Plan	Project Manager (Owner) Project Team Portfolio Management Office	Templates for various types of meetings as well as guides to using Clarity and SharePoint can be found in the Sharepoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle

Monitor and Control	Throughout the course of a project there are a number recurring activities related to keeping the project on track and making adjustments to the plan when needed. At a minimum, these activities include:
	
	• Managing risks and issues in Clarity
	• Manage change requests (see note below)
	• Following up on tasks and enforcing schedule
	• Managing action items in SharePoint
	
	• Updating project plan in Clarity:
	  • Tasks
	  • Resources
	  • Schedule
	Complex or large projects may require additional monitoring effort. The PMO can help in developing reports and tools to keep your project on budget and on schedule.
		- Project Charter
		- Communication Plan
		-Project Plan
			-Updated project plan
			-Risks, issues, and change requests in Clarity
			-Action items in SharePoint
				Project Manager (Owner)
				AFM
				Portfolio Management Office
					The PMO Monthly Checklist is a good guide for monitoring and controlling a project.
					
					PMO Monthly Checklist
					
					AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides > UpdatingAProject-PMOChecklist.pdf

Training Phase



Phase 4.5 – Training

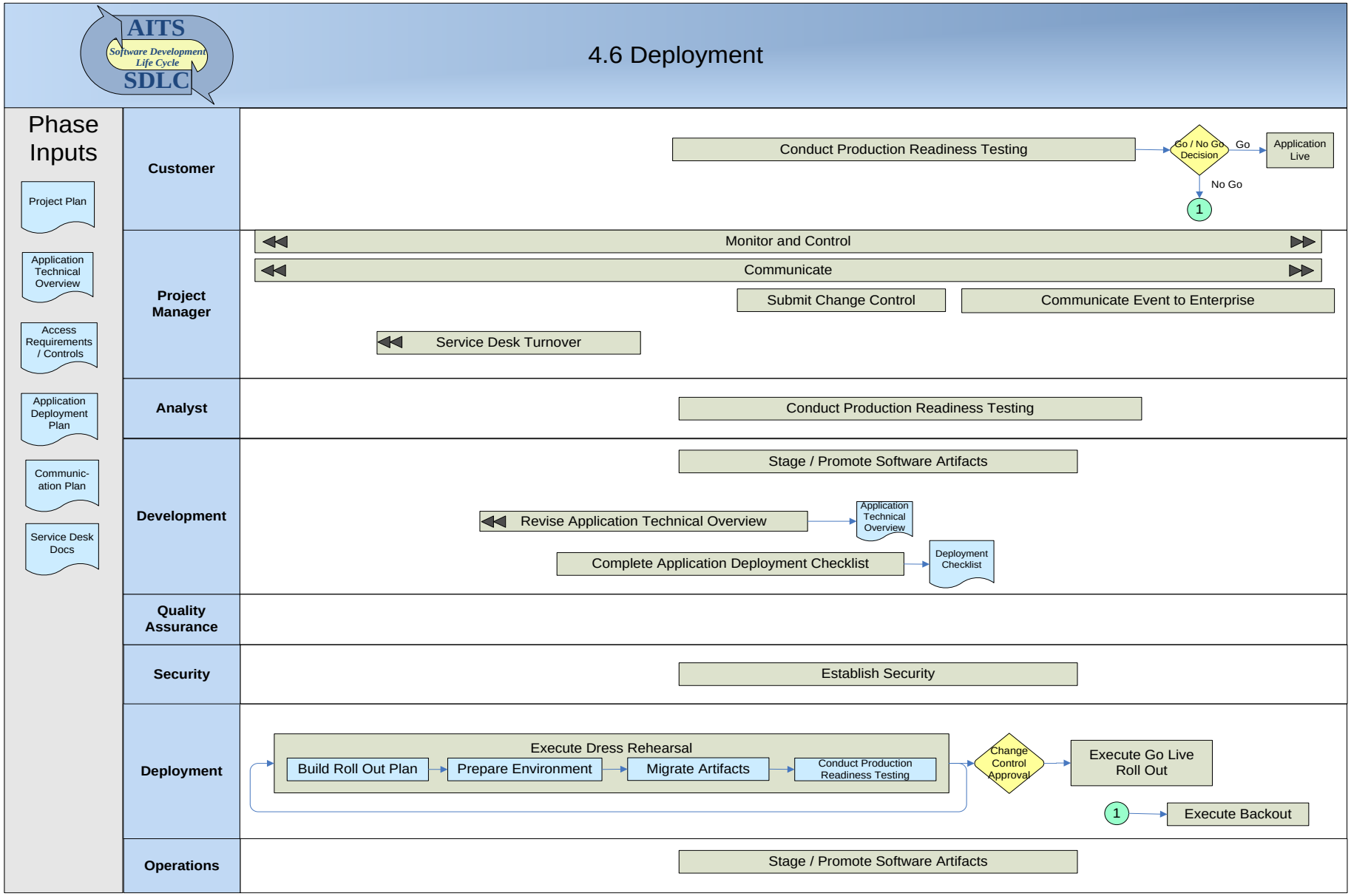
The purpose of the Training Phase is for the customers to provide formal training to the end-users of the system. The training materials have been built by the customers in earlier phases. The customers utilize the training materials, user guides, help documents, and any other needed materials to train end-users on the functionality of the system as well as needed business processes associated with the system. In preparation of the training, the Development, Security, and Deployment groups may need to build a separate training environment which may include establishing separate databases with special data and training ids and roles. The Training Phase is not always needed in every project and some customers may choose to not perform training or do so on an informal basis.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Build Training Environment	In order to prepare for the training, a new environment may be needed. The environment may consist of new databases, application servers or deployments, AppWorx chains, new user ids and roles, and manufactured training data. Furthermore, the environment may require scheduled refreshes to restore training data for use in subsequent classes.	- Deployment Plan		Analyst (Owner) Deployment Development	
Stage / Promote Software Artifacts	To support the training environment, the software components built for the application are staged and promoted into the training environment. The process is similar to what is followed for migration the application from development to test and eventually to production. The deployment plan previously built is utilized for this effort.	- Deployment Plan		Development (Owner) Deployment	
Manage Training Environments	During training there are various coordination activities that may need to be done to keep the training environment current or prepared for each training iteration. Many times these activities require coordinating tasks performed by the technical support team with the training classes being held by the customer. These activities may include training database refreshes, loading new users, coordinating of the deployment of the application or infrastructure components to get changes or fixes into the training environment, and/or serving as a point of contact for environment issues.	- Training Plan		Project Manager (Owner)	
Establish Security	The Security team sets up any ids, roles, privileges, and access needed for the trainers and participants. The security setup may mirror how it will be in production or it may include granting of additional privileges to allow for users to experience the full functionality of the system. Reusable generic ids may also be used for training purposes.	- Deployment Plan		Analyst (Owner) Security	
Perform Customer Training	The Customer may hold training sessions with end-users of the systems to teach the new functionality and business processes to them. The complexity of the training may range from informal presentations to departmental staff to formal on-campus training sessions with dedicated training staff. The training materials and user guides previously constructed are used by the Customers to perform the training.	- Business Rules Document - Training Plan - Training Materials	- Training Feedback and Surveys	Customer (Owner) Analyst	
Communication	The various forums and communication mechanisms identified in the	-Communication Plan	-Various	Project Manager	Templates for various types

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	communication plan continue to be performed as the project progresses. As the project moves into new phases, additional types of communication activities may become necessary and activities previously done may need to evolve or be eliminated as participants change or the project focus shifts.		communication outputs per the Communication Plan	(Owner) Project Team Portfolio Management Office	of meetings as well as guides to using Clarity and SharePoint can be found in the Sharepoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle

Monitor and Control	Throughout the course of a project there are a number recurring activities related to keeping the project on track and making adjustments to the plan when needed. At a minimum, these activities include:
	
	• Managing risks and issues in Clarity
	• Manage change requests (see note below)
	• Following up on tasks and enforcing schedule
	• Managing action items in SharePoint
	
	• Updating project plan in Clarity:
	  • Tasks
	  • Resources
	  • Schedule
	Complex or large projects may require additional monitoring effort. The PMO can help in developing reports and tools to keep your project on budget and on schedule.
		- Project Charter
		- Communication Plan
		-Project Plan
			-Updated project plan
			-Risks, issues, and change requests in Clarity
			-Action items in SharePoint
				Project Manager (Owner)
				AFM
				Portfolio Management Office
					The PMO Monthly Checklist is a good guide for monitoring and controlling a project.
					
					PMO Monthly Checklist
					
					AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides > UpdatingAProject-PMOChecklist.pdf

Deployment Phase



Phase 4.6 – Deployment

The purpose of the Deployment Phase is to practice the migration of the application and all of its associated components to a pre-production environment and once that has been successful to follow the same process to migrate the application to production. Through repeated practice of the migration, holes in the deployment plan as well as environmental differences are identified that could potentially jeopardize the production roll-out. The roll-out into production should follow the same process as the dress rehearsals and should be performed by the same individuals. The customers and analysts perform Production Readiness Testing (PRT) in the dress rehearsals and production roll-out. PRT touches various pieces of functionality and configuration to verify that the migration of the components was successful; it is not meant to be a regression test of the application. At the conclusion of the roll-out, the customer determines if the roll-out is acceptable in production. If it is decided that the system is a No-Go, then back out procedures may be executed to remove the application from production and restore the systems to their prior state.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Revise Application Technical Overview	The Application Technical Overview will be updated and a final copy will be produced.	- Application Technical Overview	- Revised Application Technical Overview Document	Development (Owner) Analyst	Application Technical Overview Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ApplicationTechnicalOverview Template.docx
Complete Application Deployment Checklist	The Developer completes the deployment checklist in preparation of deploying the application into production.	- Application Technical Overview - Application Deployment Plan	- Application Checklist	Development (Owner)	Application Checklist Procedure AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > Migration Forms> CC_Application_Checklist.rtf Report Checklist Procedure AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > Migration Forms>

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
					CC_Report_Checklist.rtf
Stage / Promote Software Artifacts	For both dress rehearsals and migration to production, the software components built for the application are staged and promoted into the dress rehearsal and production environments. The process for the migrations during the dress rehearsals and production migration should be as similar to each other as possible. The deployment plan previously built is utilized for this effort.	- Application Deployment Plan		Development (Owner) Deployment	Application Deployment Process AITS Intranet: Documentation Library > Methodology > SDLC > Guides> ApplicationsDeploymentProcess.docx
Execute Dress Rehearsal	In advance of deploying the project to Production, rollout dress rehearsals may be performed to validate the deployment plan and practice the deployment processes. As part of the dress rehearsals, the following activities occur: - Build Rollout Plan The primary focus of this step is to create a Rollout Plan. The Rollout Plan documents all the various activities the participating groups need to undertake during the time of deployment of the new or modified system. The Deployment Plan that was previously built is used as the starting point for the Rollout plan. The information in the standard Rollout Plan includes the following: • Step Number • Task Description • Dependencies • Related Document • Comments • Hand-off / Notification • Responsibility • Duration in Minutes • Start Date and Time • Finish Date and Time - Prepare Environment The dress rehearsal environment is prepared or refreshed for the next dress rehearsal. This may include refreshing one or more databases, restoring Appworx chains from production, running jobs (such as paycalc) to place the database in a similar state as what will be experienced during the rollout in production. The goal is to prepare the environment to be as close to what production will be like during the go-live rollout. - Perform Roll Out The roll out is the migration of and artifacts, conversions, and execution of	- Application Deployment Plan	- Rollout Plan - PRT Test Results	Deployment (Owner) Project Manager Customer Analyst Development Quality Assurance Security Operations	Rollout Planning Process AITS Intranet: Documentation Library > Methodology > SDLC > Guides> WeeklyRolloutPlanningProcess.docx

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	manual steps such as data entry to completely migrate the application into the dress rehearsal environment. The steps for the deployment are documented in the deployment plan. - Conduct Production Readiness Testing The Production Readiness Testing is executed by the customers or customer proxy to validate the implementation in production. This PRT is done exactly the same way in dress rehearsals as is done in production.				
Submit Change Control	Submitting a Change Control Request is the first step in the larger overall process referred to as Change Management. Change Control is the process that ensures that all changes are controlled. This includes the submission, recording, analysis, decision making and approval of the change. Most ITPC and internal projects would be viewed as "Major changes". Major changes should always be wrapped in a comprehensive documentation package that includes: appropriate user approvals; user training and signoffs when appropriate; an attestation that testing has been conducted, reviewed with the user, and accepted by the user; back-out plans; a detailed roll-out plan that includes success criteria, decision point documentation, escalation and notification procedures; etc. Major changes shall be approved by a management person who is no more than one level below a member of the Senior Management team, and the approval of a major change should be accompanied by a formal review of the documentation package.	- Rollout Plan	- Change Control	Project Manager (Owner)	General Change Control Procedures AITS Intranet: Documentation Library > Methodology > SDLC > Guides> AITSChangeControlManagementGuide.docx Application Procedures: Process AITS Intranet: Documentation Library > Methodology > SDLC > Guides> CC_Application_Process.docx Checklist AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > Migration Forms > CC_Application_Checklist.rtf Report Procedures: Process AITS Intranet:

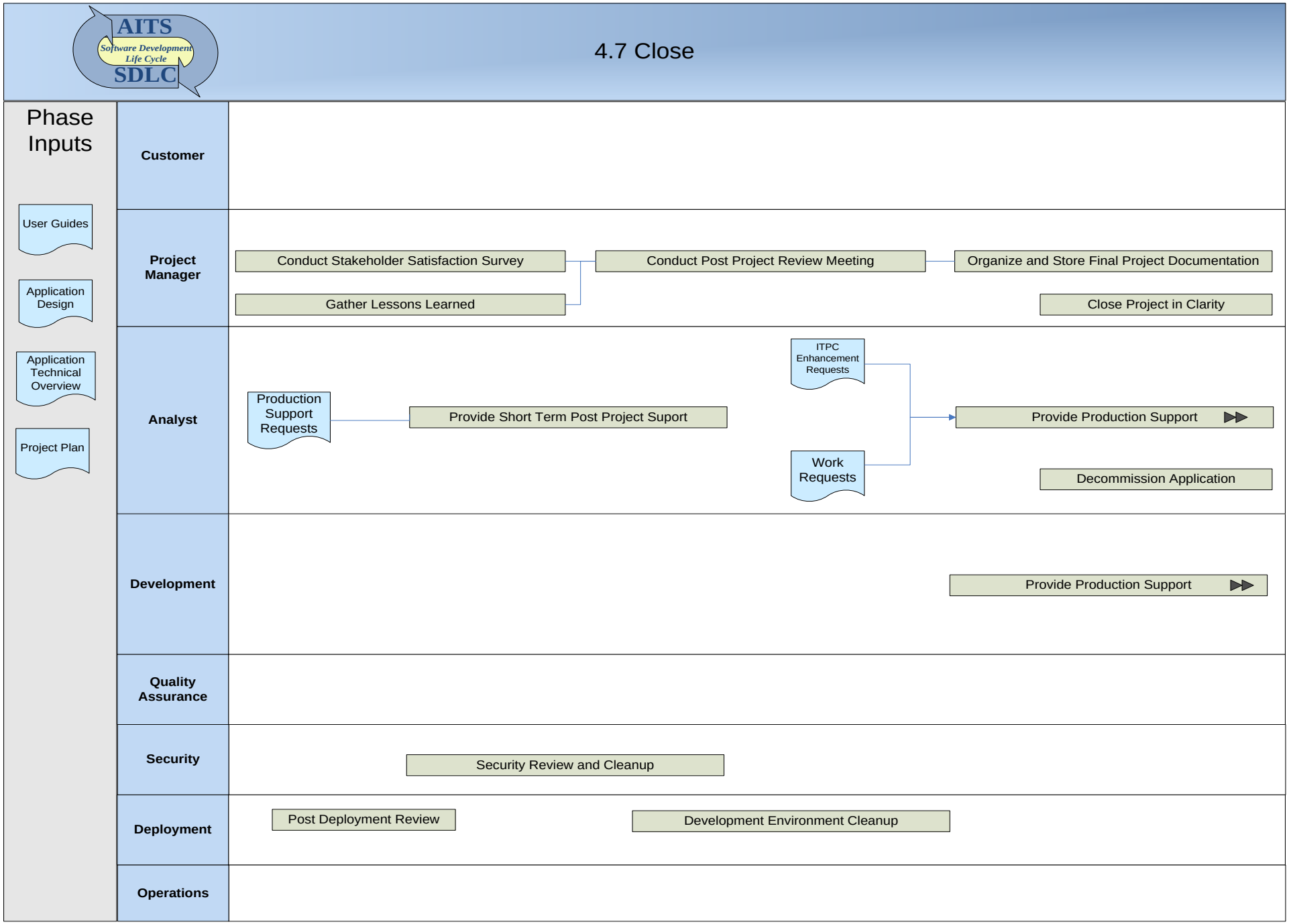
Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
					Documentation Library > Methodology > SDLC > Guides> CC_Report_Process.docx Checklist AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > Migration Forms > CC_Report_Checklist.rtf
Service Desk Turnover	Prior to go live, the project team will meet with the Service Desk to review the application and associated support items such as chain notes, ticketing queues, FAQ's, anticipated problems/questions, escalation procedures, system documentation. Members of the project team may help in the support transition by working at the Service Desk for a period of time after the roll-out.	- Chain notes - Knowledge Docs - FAQ's		Project Manager (Owner) Operations Analyst Deployment	Application Deployment Plan AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > pplicationDeploymentTemplate.docx
Communicate Event to Enterprise	Effective communication of a major event such as the deployment of a new system or upgrade is not limited to just one phase step, but rather requires activity at different times throughout several of the phases of the PMLC. The communication process includes: • Add requested events to the deployment timeline • Work with the stakeholders through ESC/TAM to obtain approval prior to approving the timeline • Review and approve the dates during the scheduling committee (based on stakeholder feedback, business events, holidays, etc) • Publish the appropriate event on the AITS status page, which sends an email to all list serve subscribers • Send an event notice based on the information in the Event Data sheet. • Post the event progress on the go-live web site • Send final event notice that system is live	- Change Control - Communications Plan	- Event Notice	Project Manager (Owner)	
Migrate Software	This step involves the deployment of new project artifacts to production. Typical activities that occur during deployment might include:	- Rollout Plan - Deployment	- Production System	Deployment (Owner) Operations	Application Deployment Plan

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Artifacts into Production Environment	• Pre-Deployment Activities • Prepare CVS for Upgrade • Prepare LDAP / LDIF Files • Conduct System Shutdown • Perform Software Upgrade • Apply Patches and Modifications • Migrate Software Tree • Perform Miscellaneous Database Activities • Implement Configuration Changes • Implement Security Changes • Migrate AppWorx and Parameter Editor Items • Migrate Reports • Migrate AITS Developed Applications • Bring Up System for Production Readiness Test	Checklists		Development Analyst Customer Project Manager	AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ApplicationDeploymentTemplate.docx
Establish Security	The Security team sets up any ids, roles, privileges, and access needed for users and support staff in production. This may include bulk loads of users and assignment of credentials as well as controlled on-going management of credentials as users are added to the system. Typically users are loaded en masse at go live, but user security will need to go through more formal request and provisioning procedures as the application stabilizes in production.	- Rollout Plan - Security Access / Controls		Security (Owner)	Access Requirements Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityAccessRequirementsTemplate.doc Baseline Access Control Review Template AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > SecurityBaselineAccessControlReviewForApplications.docx
Conduct Production Readiness Testing	After the deployment of the new project artifacts to the dress rehearsal or production environment, a Production Readiness Test (PRT) is performed to ensure that all of the components migrated successfully and is operating and that the deployment has not caused any unintended effects on system operability. Normally, there are predefined scripts or subjects that are tested during a PRT that touch as many of the areas of the system as possible. PRT is performed by the customer or a proxy for the customer who is able to make the decision to accept the application as it is in production. PRT typically is geared to be executed in a short time frame and is not meant to be a full regression test of the application.	- Rollout Plan - PRT Test Plan	- PRT Results and Sign-Off	Analyst (Owner) Customer Deployment	
Make Go / No-Go Decision	After production PRT is complete, the customer reviews the results of the PRT and any known issues and makes a determination of whether the	- PRT Results and Sign-Off		Project Manager (Owner)	

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
	system is ready to be opened up to all users. If there are issues that are critical and prevent the system from going live, then the back out procedures are executed.			Customer Deployment	
Execute Back Out	If the implementation of the application into production is unsuccessful and a No-Go decision is made, then the Back Out Procedures documented within the deployment plan are executed. This may include actions such as simply shutting the application down or restricting access to it in production or it may require a full back out of the source code, chains, configuration settings, other deployed artifacts as well as restoring data. At the completion of the backout, a Production Readiness Test is executed to confirm that the production environment is back to the pre-rollout state.	- Deployment Plan	-Restored Production System	Deployment (Owner) Operations Development Analyst Customer Project Manager	
Communication	The various forums and communication mechanisms identified in the communication plan continue to be performed as the project progresses. As the project moves into new phases, additional types of communication activities may become necessary and activities previously done may need to evolve or be eliminated as participants change or the project focus shifts.	-Communication Plan	-Various communication outputs per the Communication Plan	Project Manager (Owner) Project Team Portfolio Management Office	Templates for various types of meetings as well as guides to using Clarity and SharePoint can be found in the Sharepoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle

Monitor and Control	Throughout the course of a project there are a number recurring activities related to keeping the project on track and making adjustments to the plan when needed. At a minimum, these activities include:
	
	• Managing risks and issues in Clarity
	• Manage change requests (see note below)
	• Following up on tasks and enforcing schedule
	• Managing action items in SharePoint
	
	• Updating project plan in Clarity:
	  • Tasks
	  • Resources
	  • Schedule
	Complex or large projects may require additional monitoring effort. The PMO can help in developing reports and tools to keep your project on budget and on schedule.
		- Project Charter
		- Communication Plan
		-Project Plan
			-Updated project plan
			-Risks, issues, and change requests in Clarity
			-Action items in SharePoint
				Project Manager (Owner)
				AFM
				Portfolio Management Office
					The PMO Monthly Checklist is a good guide for monitoring and controlling a project.
					
					PMO Monthly Checklist
					
					AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides > UpdatingAProject-PMOChecklist.pdf

Close Phase


AITS
Software Development Life Cycle
SDLC
4.7 Close
Phase Inputs
User Guides
Application Design
Application Technical Overview
Project Plan
Customer
Project Manager
Conduct Stakeholder Satisfaction Survey
Conduct Post Project Review Meeting
Organize and Store Final Project Documentation
Gather Lessons Learned
Close Project in Clarity
Analyst
ITPC Enhancement Requests
Production Support Requests
Provide Short Term Post Project Suport
Provide Production Support
Work Requests
Decommission Application
Development
Provide Production Support
Quality Assurance
Security
Security Review and Cleanup
Deployment
Post Deployment Review
Development Environment Cleanup
Operations

Phase 5.1 – Close

The purpose of the Close Phase is to wrap up the project and move into production support mode. A post project review is held where both activities that went well and areas of improvement are identified. The final documents for the project are stored and archived for future reference. The Application Design, Technical Overview, and Service Guides remain living documents and are revised as changes are made in the application. Once in production support mode, the application undergoes changes due to defect corrections or enhancements that are requested in the system. Whenever these changes are made, various components of the SDLC may be used to facilitate the implementation. As such, the SDLC is a continuous process and is not only followed for new application development.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Post Deployment Review	After completion of a formal rollout activity, the Deployment team conducts a Post Deployment or Post Go-Live Review. Most rollouts occur over the weekend and there is a standing Post Go-Live Review meeting set for Tuesdays at 3:10 PM. All rollout participants are required to attend this meeting and AITS Managers are encouraged to attend. The Deployment Specialist who was involved in the planning and execution of the rollout will prepare a Post Go-Live review document and share that with all the participants. Issues and Concerns will be documented for future Deployments.	Rollout Plan Application Deployment Plan	Post Go-Live Review Document	Deployment (Owner)	Post Go-Live Review Document AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > PostGoliveRolloutSummary Template.docx
Development Environment Cleanup	After the project is complete and has been deployed to production, the Deployment team will follow up with the appropriate staff to ensure any infrastructure components are removed as defined in Post Deployment section of the Application Deployment Plan.	Application Deployment Plan		Deployment (Owner)	Application Deployment Plan AITS Intranet: Documentation Library > Methodology > SDLC > Templates and Forms > ApplicationDeploymentTemplate.docx
Environment Review and Cleanup	After the application is migrated to production and before the project is closed, access granted to developers, testers and administrative IDs in QA, DEV and TEST environments and distribution list/security groups needed only for the project must be reviewed. The review should determine either the (1) access is needed for on-going support or (2) access is not needed for on-going support and must be removed.	Application Deployment Plan		Security (Owner)	Security Post Project Cleanup and Review Checklist AITS Intranet: Documentation Library > Methodology > SDLC > Forms and Templates > SecurityPostProjectEnvironmentReviewandCleanup.docx
Gather Lessons Learned	Prior to the Post Project Review/Project Closing meeting, the project manager will send a list of selected project team members and stakeholders to receive a combined Lessons Learned and Stakeholder Satisfaction survey. The results will be gathered by the PMO, entered into Clarity, and passed onto the project manager so that results can be reviewed with the team during the meeting. The review of lessons learned is part of the post project review meeting	Lessons Learned questions	Lessons learned	Project Manager (Owner)	Questions that can be used in addition to the survey to gather Lessons Learned and to help organize lessons learned discussions can be found in the SharePoint Document Library.

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
					AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides> LessonsLearnedQuestions.pdf Project Survey Process for PMO
Conduct Stakeholder Satisfaction Survey	Conducting the Stakeholder Satisfaction Survey will allow us to gather feedback from customers as well as project team members in order to continually improve our project delivery and customer service. The survey will be sent to AITS and customer project participants as well as the customer project leadership to gather feedback about the effectiveness of the project management and the project itself. This survey is sent as part of the lessons learned survey above. The project manager will request for the PMO to send out the survey well in advance of the post project review meeting. The results will be gathered by the PMO and passed onto the project manager so that results can be reviewed with the team during the meeting.	- Project Charter	- Stakeholder Satisfaction Surveys	Project Manager (Owner) Portfolio Management Office (Owner) Project Sponsor Customers Project Team	Project Survey Process for PMO
Conduct Project Closing Meeting	Conducting the project closing meeting will allow the project team and the customer project participants and leadership to gather one last time to ensure that there are no outstanding issues or work. This will also provide a forum to review lessons learned throughout the project. The project manager will send an agenda to participants a week or more in advance of the scheduled meeting. The project manager will include in the agenda any lessons learned and results from the stakeholder satisfaction survey. Participants will add additional items to the Lessons Learned section of the agenda and return it to the project manager at least 3 days prior to the meeting. The project manager will then compile the lessons learned feedback for review during the meeting. PMO will maintain a repository of lessons learned and will periodically communicate these to the department. The Post Project Review agenda should include: 1) Outstanding items 2)Project performance against budget, schedule, and scope 3)Lessons learned 4) Other topics, such as information from the ADSD Post Project Review	- Stakeholder Satisfaction Surveys -Lessons Learned - Post Project Review Agenda - Project Plan	Project Closing Meeting Notes	Project Manager (Owner) Customer Analyst Development Quality Assurance Security Deployment Operations Portfolio Management Office	A template for the Project Closing Meeting can be found in the SharePoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Templates and Forms > TEMPLATE ProjectClosingAgendaAndNotes.dotx
Organize and Store Final Project Documentation	Organizing and storing the final project documentation will ensure that all documentation is in one central location. The purpose of doing this is to provide a single location for project documentation archives. The PMO will work with the project manager to ensure this work is completed. Development documentation will remain with the application in the appropriate CVS locations within the project or the documentation trees.	PMLC and SDLC artifacts	- Final copies of all project documentation - Stored Project Documentation	Project Manager (Owner) Portfolio Management Office	A guide to archiving project and application data is available in the SharePoint Document Library. AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides> ArchivingProjectAndApplicationData.pdf In addition, the table that

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
					identifies all PMLC and SDLC deliverables with initial and ultimate locations is available in the Document Library. AITS Intranet: Documentation Library > Methodology > Index of Deliverables and Storage Locations.xlsx
Ongoing activity: Communicate (Implement Communication Plan)	Throughout the course of a project there are a number of recurring activities related to communication. These include the activities identified in the communication plan, which typically consist of: • Weekly project team status reports (Template provided which offers a standardized agenda for status meetings throughout the course of a project) • Maintaining SharePoint workspace with meeting agendas, minutes, decisions, documentation, and status reports. • Project sponsor meetings for reviewing significant project plan changes and progress • Informal communication: walk-abouts, hallway conversations, and personal emails There are enhanced processes and requirements regarding project monitoring and control for large projects (those with greater than 5,000 hours of effort or $250,000) or any projects deemed of sufficient risk. These should be identified in the project communication plan, but are outlined here as well. For these projects it is advisable that a Steering Committee or Oversight Group be formed to monitor the project execution and collaborate on key project decisions. Templates for Large Projects are included as follows: ▪ Steering Committee Reporting Template – This is a reporting package for periodic steering committee meetings and includes standardized sections for: o Project Timeline o Significant Event Review o Significant Risks / Issues o Metric Tracking o Change Request and Defect Tracking o Budget Report o Other ▪ Large Project Budget Workbook – This is a multi-tabbed Excel spreadsheet for tracking actual versus budgeted costs for internal/external labor and non-labor items. All projects of this nature will have a unique set of circumstances which will require extensive customization of the communication plan.	-Communication Plan	-Various communication outputs per the Communication Plan	Project Manager (Owner) Project Team Portfolio Management Office	Templates for various types of meetings and resulting notes can be found in the AITS SharePoint Document Library under Methodology > Project Management Lifecycle > as well as guides to using Clarity and SharePoint
Provide Short	Providing short term post project support will ensure that any issues that	- Production Support	- Production Fixes	Analyst (Owner)	

Activities	Description	Inputs	Outputs	Owner / Participant	Links / Notes
Term Post Project Support	arise with the product of the project can be addressed in a timely manner. This will help AITS provide the best customer service possible. By tracking the short term support as part of the original project rather than lumping support hours in with all other support will allow us to track how successful the initial implementation was. This task will remain an active task on the project plan for one month following implementation.	Requests	and Documentation Revisions	Development	
Provide Production Support	Once the application is in production it moves into production support mode. As defects are discovered or enhancements requested the application continues to be revised. The work that is requested on the application varies in size and scope and depending on the effort required, new ITPC templates may be generated requiring project teams to work on the application or small development efforts may be done using a single resource. Components of the SDLC will be engaged dependent upon the size of the development effort required and what is needed. The Application Design Document, Application Technical Overview, and Service Guides will all remain updated as application changes are implemented. Production Support is an ongoing process and exists outside of the project.	- ITPC Templates - Work Requests - Application Design Document - Application Technical Overview - Service Guides	- Application Design Document - Application Technical Overview - Service Guides	Analyst (Owner) Development Deployment	
Project Close in Clarity	Once the project is completed, either the Project Management Office or the project manager will close the project in Clarity following the instructions provided in "Guide to closing a project in Clarity" document. This includes updating all tasks, resolving and closing all risks/issues/changes, updating the project properties page with final status, and updating the PMLC lifecycle page.			Project Manager (Owner)	A guide to closing a project in Clarity is available in the SharePoint Document Library AITS Intranet: Documentation Library > Methodology > Project Management Lifecycle > Guides> ClosingAProjectInClarity.pdf
Decommission Application	When an application has reached the end of its life, it will need to be decommissioned. An application may be decommissioned due to a change in business practices, expense, or the function of the application may be performed by another system. Each application is unique, but there are key steps that should be followed to disable the application, analyze the components of the application, and then remove the pieces that comprise the system. There may also be a need to convert or archive the data for future reference.	- Application Technical Overview - Application Design Document - Service Guides	- Application Technical Overview	Analyst (Owner) Project Manager Development Deployment Customer Quality Assurance Security Deployment Operations Portfolio Management Office	Application Decommissioning Process Guide and Checklist AITS Intranet: Documentation Library > Methodology > SDLC > Guides > ApplicationDecommissioningProcess.docx

Software Development Life Cycle documentation concludes on the previous page.

Phase 5.2: Post Close					
Activities	**Description**	**Inputs**	**Outputs**	**Owner / Participant**	**Links / Notes**
Conduct Six Month Post Project Survey	Conducting the Six Month Post Project Survey will allow AITS to gather customer feedback after the product has been in place for a significant amount of time. It will also allow us to revisit the anticipated benefits of the project in order to analyze the accuracy of the original estimates. The survey will be sent by the PMO to the Customer six months after project implementation. Results will be gathered and summarized, shared with the project team and analyzed across all projects by the PMO staff.	- Project Charter	- Six Month Post Project Surveys	Portfolio Management Office (Owner) Project Manager Project Sponsor Customer	Project Survey Process

The Index of Deliverables and Storage Locations can be found in the SharePoint Document Library in the Methodology folder.