



STANDARD OPERATING PROCEDURES FOR THE COAST GUARD'S TRAINING SYSTEM

Volume 7

Advanced Distributed Learning (ADL)

United States Coast Guard Force Readiness Command
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SECTION I: Introduction

1.1 Introduction

Advanced Distributed Learning, or ADL, is the Coast Guard's approach to educating, training, and supporting its workforce by combining the latest learning science with digital technology.

ADL is a structured learning or performance support that may be self-directed, self-paced, facilitated, or any combination of these methods. ADL solutions merge state-of-the-art technology and networking capabilities, which can improve and enhance traditional performance interventions. ADL solutions may be part of a resident instruction course, a pre-requisite for resident instruction, or stand-alone performance support. The Coast Guard's ADL Program is primarily concerned with solutions that span the needs of the entire organization but may engage to support common demands on a smaller scale.

1.2 Purpose

- Define the types of ADL solutions implemented by FORCECOM
- Define standardized process for developing and maintaining an ADL solution throughout its lifecycle
- Define the technical requirements for implementing an ADL solution on CG network

1.3 Target Audience

All members of USCG involved in the analysis, design, development, implementation, and evaluation of performance or training interventions in support of the Coast Guard Training system (TRASYS). The audience includes HPT practitioners, contractors, members assigned as instructors, and USCG Headquarters program managers.

1.4 Background

The CG ADL Program supports mission excellence by providing blended performance solutions and training aligned with the Modernized Ready Learning (MRL) initiative and Ready Workforce 2030. The goal of a CG ADL solution is to deliver high-quality, readily accessible performance support and training that is also cost-effective, realistic, and performance-based.

Benefits of ADL include:

- **Accessibility.** ADL solutions can easily overcome resource and/or mission priority constraints and reach employees who wouldn't have access otherwise.
- **Convenience.** Members can access performance and learning solutions on their own schedule, from any location.
- **Consistency.** ADL's nature and structure provides uniform content and message quality in the delivery of training.

- **Automated accountability and measurement.** Solutions can be integrated into Learning Management Systems (LMSs) that automate interactions and completion data.
- **Cost-effective and scalable.** Solutions often reduce costs (compared with traditional in-person learning/training solutions).

1.5 Responsibility

The FORCECOM Training Division, as the technical authority for HPT and Training, is responsible for all TRASYS SOPs. FC-T will leverage the collective wisdom of the larger USCG TRASYS members and charter work groups for updates.

1.6 Types of ADL solutions

Coast Guard ADL solutions include both instructional and non-instructional (performance support) interventions:

1.6.1 Self-paced eLearning

Also commonly referred to as computer-based training or interactive courseware, self-paced eLearning (SPeL) is instruction that provides learning solutions to support Coast Guard mission requirements; is accessible on demand via a computer or mobile device using technology appropriate to the user's environment; focuses on supporting a measurable change in behavior or attitude that provides tangible benefits to the mission; and whose solutions are deliverable over a network to ease maintenance updates and tracked to provide support and accountability. SPeL modules are developed in accordance with the [technical specifications and standards](#) of the [Advanced Distributed Learning \(ADL\) Initiative](#).

1.6.2 Facilitated Online Training

USCG Training System SOP Volume 1 defines facilitated online training (FOT) as "instructor-led" training that happens remotely. FOT is an online classroom led by a live instructor that "can be synchronous (real-time training) or asynchronous (self-led training)." Refer to the FOT Process Guide for additional information.

Synchronous

During synchronous FOT, the instructor and learners interact at the same time. Benefits of synchronous FOT include:

- Greater accessibility for participants (compared to residential models)
- Opportunities for real-time student-instructor engagement via two-way videoconferencing applications (e.g. Teams, Google Classroom, Zoom)
- Predictable schedule of activities
- Instructor provision of immediate feedback

Asynchronous

During asynchronous FOT, the instructor and learners do not interact in real time or the same location. Benefits of asynchronous FOT include:

- Greater accessibility for participants (compared to residential models)
- Accommodation of a 24/7 learning cycle—learners can participate based on mission requirements, general availability, learning capacity, etc.
- May be less intimidating for introverted learners
- Provision of feedback as needed

1.6.3 Electronic Performance Support Solution

An electronic performance support solution (EPSS) is a self-contained ADL solution (or job aid) that unifies relevant support and reference information, media, and guidance, and is organized in a logical and consistent way. An EPSS could be part of an equipment's operating system or a standalone software application on a mobile device/computer. A well-designed EPSS provides the necessary information to complete a given task.

The design, development, implementation, evaluation, and lifecycle maintenance/sustainment of EPSSs are guided by the Coast Guard's Human Performance Technology (HPT) approach, which identifies and develops interventions that solve or mitigate barriers to performance (see also 1.4, When to Implement an ADL Solution). Using inputs from a performance analysis (see the following examples), an EPSS may be selected as the solution to close skills and knowledge gaps.

Analysis inputs necessary for effective EPSS implementation include:

- Job and major accomplishments
- Job tasks
- Step-level data on the performance

EPSSs generally support three types of activities:

- Explicit procedures. Guides the user through a complex procedural task the first time—or every time for infrequently performed tasks. By presenting only relevant information at the point of performance, this solution would ideally reduce the time-on-task and negate the need to find additional aids to execute the task
- Problem-solving tasks. Aids in equipment troubleshooting by providing diagrams, “wizards,” and media-based symptom-identification aids
- Decision-making tasks. Helps the worker make the right decision

EPSSs are specifically designed to help a performer fulfill a task more efficiently.

1.6.4 Instructional Videos

Instructional videos can either be standalone solutions or integrated into an overarching training solution such as a SPeL, an EPSS, etc. Consider using professional equipment with a high degree of product to create instructional videos, but keep in mind that limited resources can still yield effective instruction if shot from the perspective of the “end user.” Utilizing instructional videos allow for subject matter experts and accomplished performers to bring their expertise to residential, virtual, and hybrid classrooms in a cost-effective manner. Videos can highlight different perspectives, which increases instructional differentiation.

While developing videos, strive to clearly define the following critical aspects:

- The topic of instruction
- The goal of the presentation
- The intended audience
- The key takeaways for the learner

Also consider factors such as format, file size, video-hosting limitations, and Section 508 accessibility while designing video solutions.

1.6.5 Other Solutions

The transition from the physical environment to the digital is one of the toughest challenges for a traditional instructor or instructional designer. Each environment presents challenges and opportunities, each presents strengths and weaknesses. When properly designed and/or integrated, the digital environment can provide safe opportunities for concept clarification, ample decision practice, and access to mediated feedback that may have otherwise been difficult to attain in the physical environment. Many of the following digital solutions are not typically delivered as standalone products but are often integrated into larger training solutions.

Simulation

A realistic representation (imitation or emulation) of a system, subsystem, situation, or device that allows the learner to access models of physical elements (e.g., parts, equipment) and social elements (e.g., people) and practice skills on performance without affecting equipment or the physical environment, and ultimately receive feedback on performance.

Augmented Reality (AR)

An enhanced version of reality where digital information is visually superimposed onto real-world environments through a mobile or head-mounted device.

Virtual Reality (VR)

A computer-generated visual simulation delivered through a head-mounted display that allows viewers to explore a fully rendered environment and virtually manipulate objects with handheld controls and voice commands.

Mixed Reality (MR)

A spectrum of immersive experiences that connects and blends physical and digital worlds through AR and VR applications.

Illustrations

Computer created/modified vector line work drawings that represent a specific piece/part/concept.

Animated Graphic Interchange Format (GIF) Images

Short, animated digital graphics.

Animations

Short movies that simulate movement. Examples include characters/objects talking, moving, or performing tasks.

3D Model

A computer-generated representation of an object that has no inherent animation, but can be virtually rotated, taken apart, etc.

1.7 When to Implement an ADL Solution

1.7.1 Stimuli for developing an ADL solution

The Force Readiness Command (FORCECOM) Training Enterprise Performance Solutions (FC-Teps) branch and the various training center (TRACEN) Performance Systems Branches (PSBs) specialize in HPT solutions and partner with FORCECOM to strategize and ensure the appropriate level of specialized support needed when ADL solutions are being considered in the following situations.

Mandate

Mandated Training (MT) is required by regulation, law, statute, or executive order. Mandates are typically passed down by Commandant Instruction or agencies such as DHS or DOD and may specifically stipulate an ADL solution. Additionally, the Coast Guard has an obligation to identify, monitor, and record completion of mandated training. In this case, an ADL solution is often the most efficient means of accomplishing this requirement.

Inputs from a performance analysis

Coast Guard ADL solutions must support the needs of the performer in pursuit of the organization's missions. One of the desired outcomes of an ADL solution is the transfer of skills and knowledge gained in training to the operational environment. Content owners must leverage performance analyses and training needs analyses to guide and inform all solution decisions. FC-T requires a performance analysis that identifies performance gaps prior to considering the development of any solution. The results of the performance analysis are documented in a report that identifies performance gaps, accomplishments, tasks, steps, and performer variables. See USCG Training System SOP Volume 2 (Analysis) for CG-approved analyses.

Utility

If a client wants to integrate ADL as part of a blended solution, it could be valuable to convert part or all of an existing resident course to an ADL solution component (if suitable).

If an ADL solution is a suitable option, training managers and the program representative should enlist the program's PSB (located at TRACENS) or FC-Teps—whichever is applicable—to determine the appropriate intervention.

1.7.2 Suitability

The MRL initiative transitions from traditional classroom instruction to “tailored, on-demand training and learning activities that promote modernized learning to maximize the continuous growth of a mission ready total workforce.” Consider employing ADL for learning/training strategies that require a more adaptable, scalable, and distributed solution. Uses include:

- Granting access to instruction before a classroom course is available
- Offering supplementary materials for the initial learning/training event
- Providing learning and performance support at the point of performance
- Fulfilling organizational requirement to push corrections and/or updates to the workforce
- Scaling a solution to the size of an audience or task; ADL can readily reach the smallest or largest audiences, and for micro-learning/training could be a single task or blended product that support every task for a given job

When training is determined to be the appropriate solution or intervention, the process of selecting the optimal modality for instruction becomes critical for achieving learning outcomes. Coast Guard HPT practitioners use the Instructional Method Selection Calculator (IMSC) or the Learning Intervention Type and Modality (LITAM) tools when selecting the most effective intervention to close a performance gap.

Instructional Method Selection Calculator (IMSC)

Training professionals use the IMSC to determine suitable instructional methods. The IMSC provides specific instructional method recommendations vice a category of interventions. Systematic review and assessment of terminal performance objectives (TPOs) "tasks" are inputted into the IMSC, resulting in a "best-fit" instructional method output.

The instructional methods determined by the IMSC support TPOs through accurate data entry, yielding usable data output to make decisions.

The IMSC calculator is available at the [Alternative Delivery USCG Portal Site](#). The IMSC Tactics, Techniques, and Procedures (TTP) is available from the [TTP public library](#).

Learning Intervention Type and Modality (LITAM)

The LITAM tool is a web-based application that allows USCG HPT practitioners to select appropriate interventions to close performance gaps. It systematically arrives at at four critical decision points, each building upon the previous, and ultimately arrives at the appropriate intervention. The four decision points, which are listed in the same sequence that they are presented in the tool, are:

- Train/job-aid decision
- Performance support recommendation
- Synchronous/asynchronous decision
- Modality of instruction decision

Access the Coast Guard's [Electronic Performance Support Systems Catalog](#) to view the LITAM tool.

While HPT practitioners should make best use of IMSC and LITAM in conjunction with each other, practitioners should not rely solely on the tools to determine a modality. The practitioner must also make sound judgments based on experience, resources, and HPT methodologies.

1.8 How do I get an ADL Product?

Developing a training intervention requires assembling a design project team comprised of different stakeholders. A stakeholder is any person(s) or organization(s) with an interest or concern in the development and implementation of an ADL product.

1.8.1 "Meet the Stakeholders"

Each of the following roles represent the stakeholders typically involved in the lifecycle of developing and maintaining an ADL product. In some instances, not all roles are required—often, a person can fill multiple roles.

Technical Authority

The FORCECOM Training Enterprise Performance Solutions (FC-Teps) branch provides technical authority for ADL efforts for the Coast Guard, consultations, and can provide access to a contracting vehicle, if needed.

Program Manager (PM)

Initiates the solution request and assigns a signing authority who accepts incremental and final deliverables.

Training Manager (TM)

Brokers the consultation between the PM and solution development staff (e.g., PSB or FC-Teps) to identify appropriate options and estimate potential lifecycle costs. Also monitors and provides status updates to the PM.

Performance Analyst

Collects, analyzes, and reports data about the performance gap based on the business requirements and goals of the client.

Performance Consultant

Recommends an intervention to close the performance gaps in line with the client's business goals.

Performance Systems Branch (PSB)

Aligns curriculum design processes, tools, and local policies with formal Coast Guard Training System policies and procedures for designing resident instruction, e-learning, and enlisted rating advancement training system support deliverables.

Project Manager

Oversees project execution and ADL-development effort and is ultimately responsible for the creation of an ADL solution. Assigns a project lead.

Project Lead

Leads the design and development of an ADL project in scope and/or function. Responsible for project execution, resource assignment, and client interaction.

Digital Solution Consultant (DSC)

Expert in digital solutions who provides solution selection, conceptualization, resource estimates, and risk consultation to PMs, TMs, performance analysts, and project leads.

Designer

Internal or contracted entity who creates the blueprint for the solution. May be involved in the selection, design, and development phases.

Developer

Internal or contracted entity who creates the functional ADL product. May be involved in the selection, design, and development phases.

Accomplished Performer (AP)

An individual who routinely produces accomplishments at or above standard and whose skill or performance exemplifies the optimal or desired state.

Subject Matter Expert (SME)

The most knowledgeable person regarding a specific subject. SMEs provide valuable insight to the project at a high level and provide input on items such as current training and strategic program goals.

Contracting Officer (KO)

Executes any contracted effort.

Contracting Officer Representative (COR)

Provides domain-specific expertise during the review of delivery increments for any contracted effort.

Implementation Manager

The business unit responsible for hosting the ADL product. For example, FORCECOM Business Technology Management Branch (FC-Btm) is the implementation manager for solutions hosted on the CG Learning Management System (LMS). FC-Teps is the implementation manager for solutions hosted in the EPSS catalog.

Course Administrator

The approval authority for a validated course developed for LMS implementation. For courses with a designated training center, this role is typically filled by a schoolhouse or PSB chief. For courses without a designated training center, the FC-Teps branch chief provides approval authority.

Solution Lifecycle Manager (SLM)

Responsible for the oversight and maintenance of a published ADL solution. Program managers and PSB chiefs are typically assigned as SLMs.

1.8.2 Request Consultation

Before requesting a consultation:

- The PM and TM must be identified
- The other roles will be assigned as part of the consultation and project initiation phases

The process for getting started is identical for every type of ADL product.

Training solution supported by TRACEN/PSB

If the requesting program is [located at a TRACEN and/or has a serving PSB](#), they should connect directly with the applicable PSB.

Training solutions not supported by TRACEN/PSB to be supported by FC-Teps

The Program Manager should first initiate a discussion with the applicable TM regarding the need and possible solution. In turn, the TM will contact FC-Teps.

How to identify your TM

Training managers are an integral part of the training system, in that, they serve as subject matter experts regarding USCG training. They function as liaisons between USCG program offices (with and without corresponding PSBs) and support units such as FC-Teps. While Program Managers initiate support requests and identify project champions, the TM brokers relationships with performance consultants and helps Program Managers identify appropriate performance interventions.

Requesting support from FC-Teps

FC-Teps is a one-stop shop for:

- Designing and developing performance-based interventions focused on supporting mission execution
- Managing courseware available through the Coast Guard LMS

Initiate requests for FC-Teps by completing and submitting a [Request for Assistance \(RFA\)](#).

The required fields query feasibility, relevancy, and measurability of the project; requesters can also upload applicable supporting documentation (policy, analysis, etc.). FC-Teps reviews submitted requests and assigns a performance consultant as appropriate.

Following initial contact, FC-Teps performance consultants will work directly with the TM to gain an understanding of the desired outcome, screen and scope the project, and determine a way forward. Questions that typically guide performance consulting include:

- Who is the project champion?
- What is the current state (problem)?
- What is the desired outcome (end state)?
- Is there policy, federal statute, regulation, and/or an analysis to support the request?
- What is the general scope of the work?

Expected outcome of performance consulting

Once a Request for Assistance (RFA) has been received, the initial performance consulting will take approximately one to two weeks. If the project meets basic criteria and the request has required documentation, the project will move to a project status of screening and scoping.

Typical screening and scoping lasts approximately one to two weeks. Performance consultants will:

- Conduct an extant data review
- Score the project
- Conduct meeting with TM and program representative

Following screening and scoping, the performance consultant will recommend the appropriate intervention/solution, and then forward to FC-Teps leadership for approval to implement. Multiple interventions may be necessary to close a performance gap.

1.8.3 USCG ADL Solution Process Map

If an ADL solution is a viable intervention, the TM should reach out to the respective PSB or submit an RFA to FC-Teps.

Interventions suitable as an ADL product should follow the same basic process:

1. Project initiation
2. Pre-design
3. Design
4. Development
5. Testing
6. Deployment

7. Evaluation and lifecycle sustainment

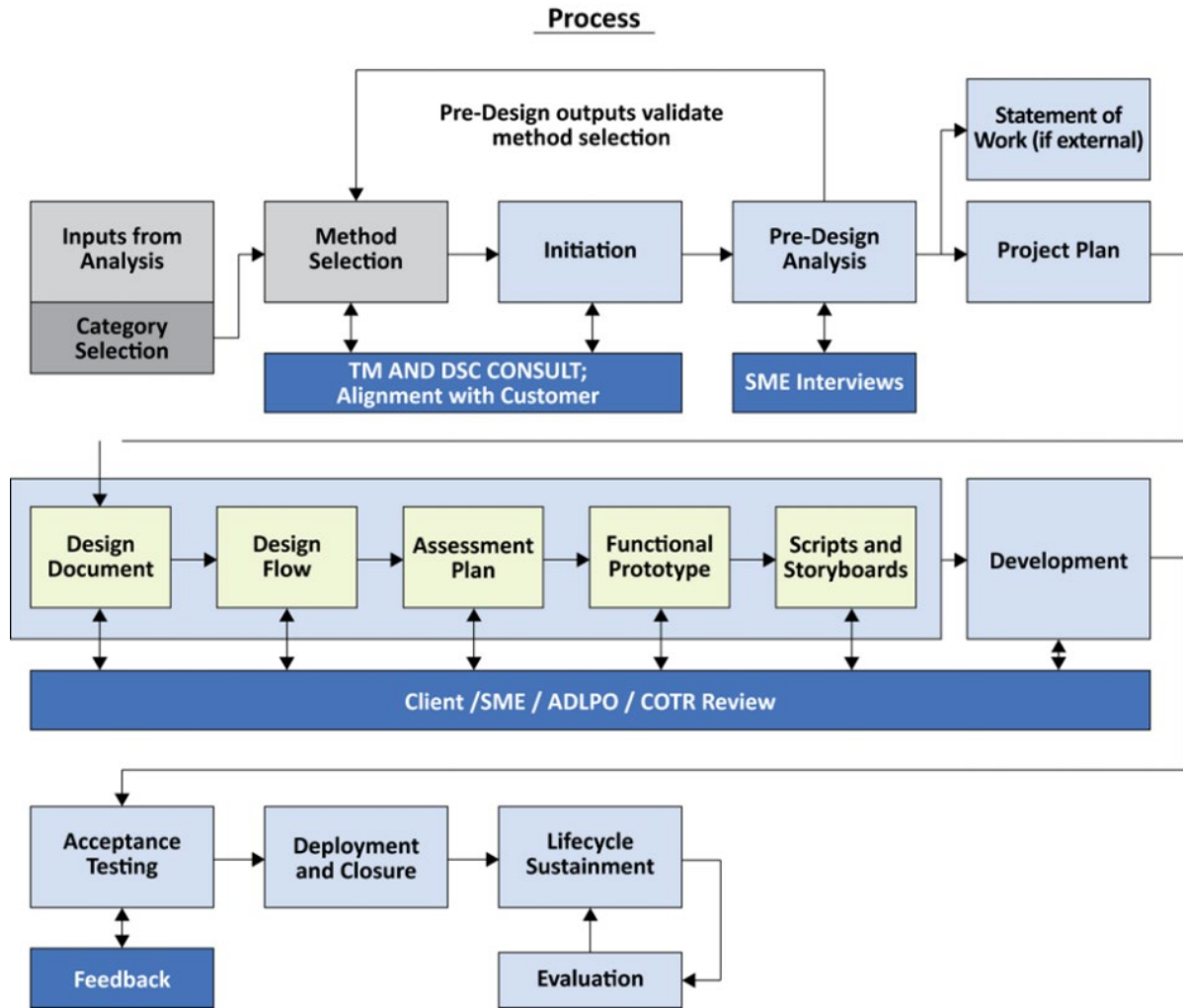


Figure 1. USCG ADL Solution Process Map

SECTION II: Procedures

2.1 Phase 1: Project Initiation

The project initiation phase is the start of internal design and development, or the commissioning of a contracted effort for an ADL solution. Project parameters, constraints, and stakeholders are determined during this phase.

The project lead will conduct an alignment meeting with the PM and TM to detail the project's scope. During the alignment meeting, the following are determined and defined:

- Solution parameters and constraints
- Specific goals
- Specific tasks and deliverables
- Required resources
- Technical requirements of the solution (including accessibility requirements)
- Team members and stakeholders
- Evaluation iterations

The project lead will document the project scope, technical requirements of the solution, and constraints in an alignment agreement. The alignment agreement will include statements of plan of action and milestones (POAM) and their estimated completion times. (See Appendix D for an example alignment agreement.)

In addition to the documents required for internal development, contracted work may require a statement of work (SOW) or performance work statement (PWS). The SOW considers the performance and business goals; defines all tasks the solution should address; and all work to be performed, requirements, and guidelines. A comprehensive SOW reduces risks for the vendor and the customer, and can also reduce costs and increase solution effectiveness. The SOW should be constructed based on analysis outputs and pre-design analysis.

Parameters and Constraints

Parameters and constraints define a project's scope, budget, schedule, quality, risks, and general limitations. Account for any anticipated travel and equipment costs and who is responsible for incurring. Designing and defining these boundaries early help projects avoid common pitfalls. Constraints encountered while developing ADL solutions can include personnel availability, development capacity, schedule, cost, and change control.

Consider the following parameters when initiating a solution:

- **Accessibility requirements (Section 508 of the Rehabilitation Act (1973)).** All Federal employees and contractors who produce information and computer technology (ICT) products or services for the Federal Government must ensure the ICT they develop is usable by and accessible to people with disabilities. Federal employees require equal access to technology to perform their jobs successfully and have career advancement opportunities afforded to all employees. When this information is presented in a way that is not accessible to people with disabilities, those

people are shut out from essential services and opportunities that should be available to all Americans. Additionally, a large number of Americans with disabilities are employed by the federal government, and having accessible technology is essential for them to be able to perform their work effectively. The revised Section 508 Standards apply to ICT that is “procured, developed, maintained, or used” by Federal agencies. See Appendix C: Section 508 & Accessibility for more information.

2.2 Phase 2: Pre-Design

During the pre-design phase, the designer will conduct a learner/contextual analysis, define cognitive tasks, draft instructional objectives, and conduct task detailing as necessary for the ADL solution.

2.2.1 Learner/Contextual Analysis

It is critical to understand target learners and the environment where the performance occurs. Expected performance threshold (i.e., novice, intermediate, and expert), current average performance level, and audience access to technology should all be considered.

Learning and context are inseparable. The where, when, how, and with whom shapes a learning experience. To address this, the designer will individually survey or interview target learners to collect data, such as demographic information (e.g., age, income, occupation, location, education level), and their perceived needs, attitudes, experience. Collecting this information ensures that course designers select appropriate instructional and assessment strategies to meet target learners’ needs. Instructional designers will document this analysis in the design document.

2.2.2 Considerations for Cognitive Tasks

Pre-design analysis may uncover additional data to define task definitions and training requirements. Along with tasks identified during the performance analysis, instructional designers will identify cognitive tasks help to determine instructional objectives.

2.2.3 Selection and Construction of Instructional Objectives

Instructional objectives define the foundation (concepts, skills, and values) for the performance pyramid in figure 2. The objectives define the actions and measurements employed in a solution.

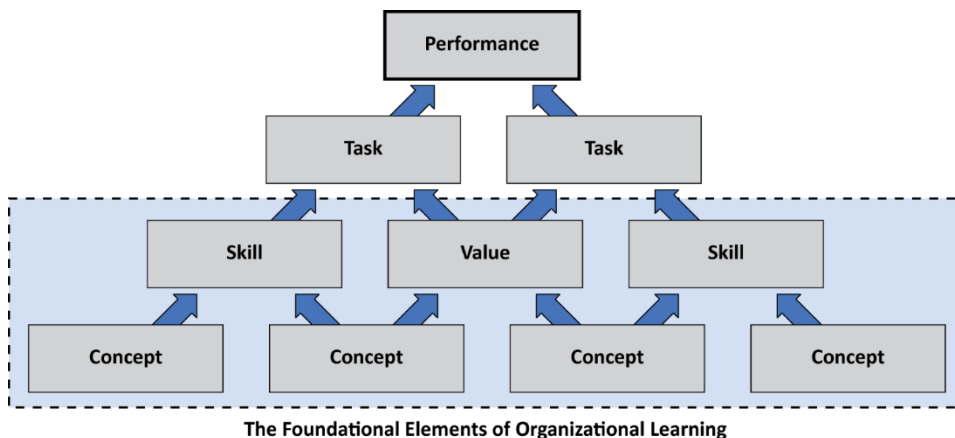


Figure 2. The Foundational Elements of Organizational Learning

Draft instructional objectives are one of the outputs of the pre-design analysis. These objectives may evolve during the design phase. It can be helpful to ask the following questions while constructing instructional objectives:

- Performance-based: What do I need the learner to do?
- Cognitive and performance-based: What skills help the learner accomplish the tasks that need to be completed?
- Cognitive-based: What decision(s) does the learner need to make while they perform this action?

2.2.4 Task Detailing

The detailing team should review each major accomplishment and the subsequent tasks to ensure they are appropriately organized as well as current and accurate. Additionally, instructional designers will capture and validate appropriate step-level data (i.e., enabling objectives) during the task-detailing meeting in preparation for the instructional design process. Task detailing is critical because data may not originate from APs or SMEs, and data collected from publications or other sources may be misinterpreted.

Use the [Task Detailing worksheet](#) as a guide.

2.3 Phase 3: Design

2.3.1 Overview of Design Activities

This phase builds on the work done during the pre-design analysis phase. During the design phase, the blueprint for the solution is established. This phase combines curriculum and lesson planning, instructional design, creative writing, and software specification. Design capabilities and limitations directly correlate with the software platform identified as part of the solution.

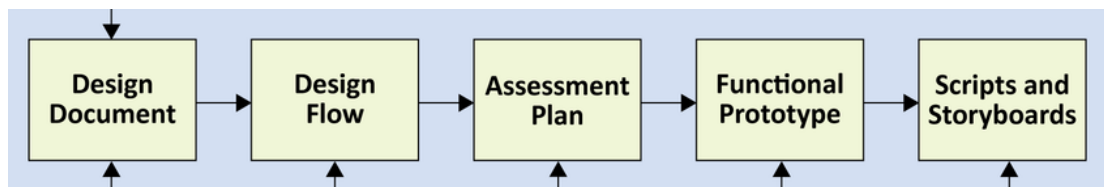
Deliverable Requirements

Every performance intervention requires the following deliverables during the design phase:

- Design Document
- Functional Prototype

Instructional designers will define other planning artifacts as appropriate for the selected intervention.

Design activities result in the following outputs:



Design Document. At a minimum, each project will have a design document. The design document represents assumptions of goals, objectives, instructional strategies, types of training materials,

and evaluation methods. This document defines assumptions that drive all components of the ADL solution, including learning content, sequencing strategies, and functionality specifications. A design document should include:

- **Problem.** The current state and an explanation of why an intervention is needed
- **Intervention description.** What will be created to close the performance gap(s)?
- **Learner population.** The intervention's entire target audience
- **Learner/contextual analysis.** As described during pre-design, the target audience's characteristics (e.g., age, education, income), experience, location, abilities, and any other data that describes essential characteristics of the target audience. It also dictates the environment (e.g., weather, hazards, location, equipment) where performance occurs. This analysis ensures the design and strategies used will support the learner's needs.
- **Objectives.** List of the instructional objectives
- **Design approach.** Methodology for presenting the content
- **Instructional strategies.** The instructional approach and how theory supports it
- **Assessment strategies.** Plan for assessing performers. (See the Assessment Items Worksheet in Appendix E: Design Document Example)
- **Media requirements.** The technology needed.
- **Assumptions.** Project expectations to ensure project success (e.g., project scope will not change once an agreement is signed)
- **Acceptance testing plan.** Plan for testing and evaluating the product before implementation

While each ADL solution will differ, other outputs from the design phase would also include:

Design flow. The design flow extends the assumptions established in the design document and provides a high-level mapping of specific elements in the solution. The design flow provides a top-level organizer that guides storyboard development and provides an orientation guide or map for storyboard reviewers. The developer can also use the design flow to better understand complex instructional flows. The design flow can take different forms, including an outline or flowchart (preferred).

Assessment plan. The assessment plan defines the strategy for all projected test items. An assessment plan is required for instructional interventions and is delivered before the completion of the storyboards. Although test items may change over the course of the design, the test item strategy will not change unless objectives change.

Functional prototype. The functional prototype couples a small technical component delivery with an example storyboard that correlate to the production. It is a type of the lesson packaging that illustrates:

- All user, screen design, and media conventions
- Training/branching and remediation/reinforcement strategies
- Learner control features
- Anticipated learning activity types and treatments

- Recordkeeping, bookmarking, and tracking features
- Narrators and other audio features
- A small portion of the design strategy in a section of storyboard and prototyped output

Storyboards and scripts. Storyboards are used to develop screen presentations, activities, and supporting materials for the solution. These documents provide a review opportunity for stakeholders and subject matter experts before development begins. Storyboards and scripts provide explicit descriptions of all content and activities. These planning elements define how every facet of the solution will function, how it will look, and how it will conform to Section 508 guidelines. They specifically define the experience, content, and message for each topic, lesson, and module.

Curriculum outline and course codes. The Coast Guard requires a curriculum outline for instructional interventions. Internal staff must complete a curriculum outline prior to deploying the solution (see USCG Training System SOP Volume 6) and include a course code. FC-T Training Managers should submit requests course code request early in the design phase to facilitate deployment.

Iterative Review Cycles

Each phase should address the number of evaluation iterations expected for each deliverable. To reduce risks, increase quality, and minimize unnecessary effort, a “Rough, Polished, and Final” review cycle is recommended for most deliverables. The following illustrates how this would work for a design flow.

- **Rough.** The PM (or designated reviewer) reviews the rough design flow and provides feedback. Rough deliverables may include questions for the reviewer/SME and may not be complete
- **Polished.** The PM (or designated reviewer) reviews the polished design flow and provides feedback
- **Final.** The final design flow integrates feedback from the polished review cycle. Final submissions are repeated until the deliverable meets designated standards for acceptance

Define the methods for risk control and review during the project kick-off and dictate in the alignment agreement. Some deliverables may not require a rough delivery and some projects may not have the schedule or resources to accommodate this risk mitigation strategy.

Media Requirements

Defining requirements requires considering both development software and the digital environment that will host the ADL solution. It is important to identify and select the appropriate technology to ensure it is available or obtainable.

The following table lists available development software and environments for hosting ADL solutions.

Intervention	Development Software	Implementation Tools	Hosting Domain
SPeL	Storyline, Adobe Pro, Adobe Creative Cloud	Laptop, Coast Guard issued Workstation, Mobile device	Learning Management System

FOT	MS Office, Adobe Creative Cloud	Web-conferencing (e.g. Teams), web camera	Milsuite, Microsoft Teams
EPSS	Adobe RoboHelp; Storyline	Web browser, mobile device	Epsc.uscg.mil

Potential media support includes:

- Simulations
- AR
- VR
- Mixed reality (MR)
- Illustrations
- GIFs
- Animations
- 3D models

Consult with the project's developer to ensure selected media support will be compatible with the selected development software and hosted environment.

Factors Important to Interaction Design

The above solutions can provide high levels of interactivity. Interactions appear both as the driving force for the experience and at the core of activities. These activities are directly linked to the learning objectives and represent the actions or abstraction of interactions taken by the learner. Activities can include part-task practice activities, immersive 3D environments/models, and games that provide the learner an opportunity to experience a task or concept from multiple perspectives. Activities can also help the learner make meaningful connections to the task through experimentation. If the objectives are framed properly, the selection and construction of interactions becomes much easier and more natural for the learner.

AR/VR/MR Considerations

Integrating other solutions such as AR/VR and MR into a training solution can greatly enhance the learning experience. Consider the following before implementing these technologies:

- **Learning objectives.** It is essential to identify the learning objectives of the training courses before integrating AR and VR. This will help determine how these technologies can help the performer achieve the desired learning outcomes.
- **Content.** Design content to take advantage of the immersive and interactive nature of AR/VR/MR to provide an engaging and memorable learning experience.
- **User experience.** The designer must ensure that the learners can easily navigate and interact with the virtual environment.

- **Technology.** The chosen technology should be compatible with the hardware and software that the learners are using; scalable; secure; and easy to maintain
- **Budget.** The implementation of AR and VR technologies can be costly. Evaluate the return on investment and ensure that the costs are justified by the learning outcomes
- **Training and Support.** Learners, trainers, and administrators must have adequate training and support to ensure they are comfortable using the technology and can benefit from the full range of features and capabilities

Common Design Considerations

Regardless of the ADL solution type, the final product should:

- Provide learning and performance support that is task or problem-centered vice content-centered
- Be relevant to a learner's world of work, and clearly articulate the relevant relationship between the training and the job performance whenever possible
- Be adapted and built to the learner's prior experiences vice assuming a generalize audience
- Include specific feedback
- Have varied practice activities to optimize retention and accelerate skill acquisition
- Provide opportunity to experience the consequences of the work performance
- Support the needs of the performer
- Produce measurable, positive performance change in pursuit of the organization's missions
- Transfer of knowledge/skills or support to work performance
- Be respectful of the performer's time and environment
- Be focused on value and relevance
- Exclude unnecessary distractions or burden to performers

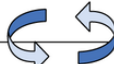
2.3.2 Designing for Self-Paced eLearning

Consider the following when designing for ADL solutions developed as a SPeL.

Planning Instructional Strategies for Performance Objectives

Without the guidance of a facilitator to lead learners through each learning event, it is still important to account for the entire learning journey when designing the training. Learning strategies are employed to increase the number of links between presented information and existing knowledge. Learning strategies are selected based on the learning context, audience needs, and learning objectives. These strategies inform the selection of interactions and the selection of media. Designs shall employ an appropriate learning model to ensure that learning is complete and appropriate to the complexity of the task.

See the table below for examples of learning strategy models:

INTERNAL LEARNING PROCESS	9 EXTERNAL INSTRUCTIONAL EVENTS: GAGNE	HARLESS 6P	DDPA MODEL
Alerting the learner to receive information (stimulus)	Getting attention	Preview	Deliver
Setting expectations for the outcomes of learning	Informing learner of lesson objectives		
Retrieval of items in long-term memory for use in working memory	Stimulating recall of prior learning	Prepare	
Focusing on the content of the learning material (selective perception)	Presenting learning guidance	Prime	
Gathering and processing (semantic encoding) of presented material, to create a form for long-term storage and ready retrieval (recall or recognition)	Providing learning guidance	Prompt	Demonstrate
Responding with a performance that verifies learning has occurred	Eliciting performance	Perform (readiness verification)	Practice (initial and variable adaptations with feedback)
Reinforcement, to ensure that the results of learning are established and integrated into long-term storage (knowledge)	Providing feedback		
Providing cues that activate cognitive access to desired information (used for recall or recognition)	Assessing performance		
Generalizing performance to new situations and instances of learned behavior	Enhancing retention and learning transfer	Practice	
The Coast Guard uses the SABA Peak Performance System for Performance Analysis. The 6P Model Described above is part of the Curriculum Design Process.			Assess (readiness verification)

Storyboards

Designers must create storyboards for ADL Solutions that have a SPeL component. The storyboard is an easily reviewable planning blueprint that details the mapping of content, references, and activities for performance support or instructional strategies. It can include images, animations, movie segments, sound, text, and navigation aids/paths. Storyboards for customer review need not include unnecessary technical details. Unless other formats are approved ahead of time, develop storyboards in either a Microsoft Word or PowerPoint format.

Requirements

- Screen title
- Unique page title
- Content
- The words and images, if applicable, which will appear on the screen
- On-screen functionality
- Explanation to developers of what each button or interaction should accomplish
- Navigation directions
- How to advance to the next, or go back to previous, learning element
- Script for audio is a narrator's script. Care should be taken to not read the text on screen word-for-word

- Practice exercises
- Feedback must be included and both timely and appropriate.
- Feedback must reinforce a correct answer and/or help learner to correct mistakes
- Test-outs and final exams should provide the learner with a number of attempts made and/or remaining.

See Appendix F for a storyboard example.

Interactivity

To keep learners engaged, designers must account for both cognitive and technical interactivity.

Interactivity Factors

- **Goal.** Drives interaction selection and defines the activity's purpose. Should align with the user's goal. With an activity interaction, the goal should match or support the learning objective(s).
- **Feedback.** A required part of interactivity. Specifies whether a user gets the expected response when performing an action.
- **Control.** Shows how users access information and activities. Can be forced linear or open navigation.
- **Variety.** Measure of difference from other interactions. There should be a reason to repeat similar patterns of interactions.
- **Pacing.** Frequency the learner is encouraged to participate. There should be a balance in symmetry of communication (ratio of presentation to participation) and presentation of materials should be appropriately timed.
- **Context.** The user's sense of place.
- **Complexity.** Should align with the performance level of the user and offer opportunities for progression in complexity, from simple to more complex.
- **Progression.** The activity should build on the complexity of a previous experience.

Levels of Interactivity

For specific interaction choices involving specific tasks, the level or complexity of interactivity should correlate directly to the complexity of the task or subtask. Strategic design choices that center on meaningful actions should drive the learning experience. *For example, level 1 (passive learning), level 2 (simple branching scenarios), level 3 (complex scenarios), or level 4 (gamification).*

The Interactivity Trap

An interaction presents the opportunity to participate in a contextual activity and provides meaningful practice that will result in a real-life skill change. Do not attempt to add empty gimmicks such as (drag, slide, click or branch).

Common Types of Interactions/Activities

In addition to the types of objectives, budget, timelines, the type of authoring software used, and the expertise of the development team may determine which learning activities are selected.

Determining Assessment Strategies

When writing test items for eLearning, consider a variety of question types. Test items should also consider multi-part decisions, approximations of the task, and authentic simulations of the task environment. Ultimately, the complexity of an assessment item shall match the complexity of the task being measured.

Types

- Formative assessments. Ensure learners are progressing appropriately toward the learning objectives. Each objective should have its own set of assessments. This can be knowledge based and/or performance based.
- Summative assessments. Used at the conclusion of each objective. Can be knowledge-based and/or performance-based examinations. Examples include final multiple-choice examinations and end-of-course projects.

Determining Knowledge and Skills

A pre-test assesses student's prior knowledge and skills and can determine whether the student must complete the entire course. Post-tests must use the same question bank as the pre-test to pass the course.

Remediation

All SPeL assessments should include remediation. Remediation enriches a learner's understanding of concepts and tasks, builds strong memory connections, and corrects misconceptions. Remediation should attempt to present information from a different viewpoint or detail than the primary content path.

Requirements

USCG Training System SOP Volume 10 offers specific supportable rules and methods for design and construction of test items.

2.3.3 Designing for EPSS

The design phase must precede solution development and testing. Following this sequence minimizes rework risks and establishes expectations. Successful processes may vary by solution and engagement.

EPSS Media Considerations

When making design decisions about delivery methods and media selection, designers must consider the primary goals of the solution. Design decisions should be documented and reconciled prior to delivery. The environment where the EPSS is accessed affects design and development decisions.

Example:

Goals

Task Support

Remove on-the-job task-related bottlenecks.

Expertise Development

Design Considerations

- Provide rapid access to job related information
- Provide help, guidance, and advice
- Provide evaluation tools and rubrics for validation of work performed
- Provide just-in-time, task-based training support

Overcome real-time skill and knowledge related gaps.

- Provide skill practice (cognitive skills) just-before moment of need

Performer Information Retrieval

An EPSS helps performers retrieve information needed to complete a task. Examples of ways performers retrieve information while completing a task include:

- **Recall:** Performers store some critical information in memory. Analysis processes describe selection criteria that prescribe “train to memory”
- **Search:** Performers are supplied discoverable and accessible information that fill the gaps where memory recall is not feasible or necessary
- **Learn:** Performers use information to formulate a mental model for executing a task. This strategically bolsters unassisted task performance
- **Devise:** Performers pull from their own knowledge, or external information and available learning resources to find new solutions to problems

An EPSS is a structured solution that intentionally leverages each of these factors to increase performance and task execution efficiently and accurately.

Combining Support Tools

An EPSS may also be part of a blended or combined solution with residential training that uses the EPSS as a job aid for introductory or extensive training. By design, performance-support tools provide a bridge between the technical data that supports the system, the concepts that support the application of skills, and the contexts that the worker is likely to encounter when performing a task. The task support and expertise development resources provided by a well-designed EPSS can provide a powerful complement to authoritative guides for maintenance and onboard apprenticeship resources. An EPSS is intended to accelerate skill acquisition and expertise development while reducing the demand on senior technician’s time for new or infrequently performed tasks.

EPSS vs. MPC/MRC Resources

Performance support tools are not replacements for technical data and logistical support guidance, including Maintenance Procedure Cards (MPC)/Maintenance Requirement Cards (MRC). When an EPSS solution is available, it is a supplement for MPC/MRC cards. In addition, MPC/MRC cards may be included in an EPSS to streamline the maintenance process. However, care must be taken to ensure performers understand that version updates of the EPSS may not match authoritative MPC/MRC sources. Developers should utilize direct hyperlinks to authoritative references to help ensure validity of content. Feedback may be submitted via built-in feedback forms in the EPSS or through FC-Teps [request for assistance](#) when content discrepancies are found.

EPSS vs. Manuals

A well-designed EPSS shares many characteristics with a well-written manual. In many cases a manual can offset or displace the need for rich media support. However, a manual cannot effectively deliver dynamic supporting media that contribute to performer orientation for concepts critical to the performance of a task. Careful consideration should be given to sustainability, accessibility, and the world of work of the performer expected to access an EPSS or manual for the performance of duties to determine which tool would best serve the need. A major advantage of EPSS is the distribution and inclusion of updated guidance/technical data that can be disseminated more easily electronically than in hard copy.

EPSS Structure

Layout

An EPSS typically comprises four layers.

Layer	Description
Interface Shell	Similar to a Graphical User Interface (GUI) found in courseware, the interface shell provides the user with a mechanism for accessing content and control. Examples include table of contents, standard menus, and search functionality.
Generic Tools	Generic tools include the interaction patterns and media methods described below. These are generic information, articulation and elaboration support methods that can be helpful in task support or expertise development. <ul style="list-style-type: none"> • Help systems • Documentation (linked or embedded) • Indexed Search • Intelligent Agents/Wizards • Tutorials/Orientations/Demonstrations • Simulation Tools • Communication Resources
Application Specific Support Tools	Any tools that are specifically built to support a task. For example, an alignment or programming utility loaded to a piece of hardware necessary to adjust a piece of equipment.
Application Domain	The setting and context that contains the task set establishes the framework for the EPSS. In other words, the demands of the job, as viewed from the performer's perspective helps determine the design construct for each EPSS.

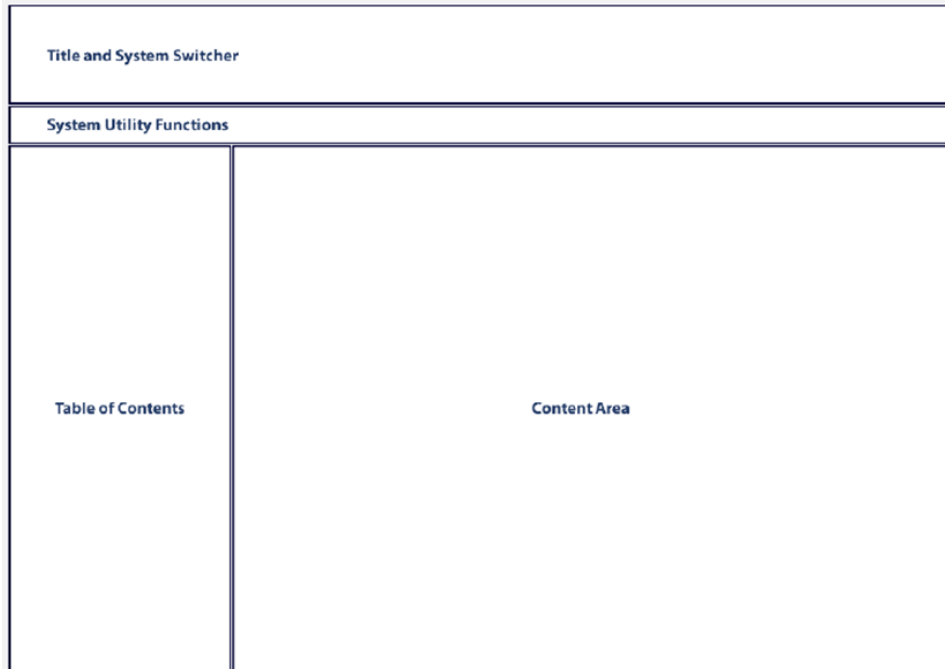
The structure of an EPSS product may vary depending on the application domain, specific support tools, and other contextual elements. A technical EPSS will typically follow this order:

1. Overview (construction, description, cautions)
2. Operation (controls and indicators, concept of operation)
3. Maintenance (philosophy and tasks)
4. Troubleshooting
5. Adjustments and Repair
6. Resources and References
7. Glossary

Features and Functions

EPSS products MUST include the following:

- **Client-side Search.** The product must be searchable using a built-in client-side search function. All documents and content should be indexed for the search.
- **Task-driven Table of Contents.** The table of contents should include a nested/hierarchical structure of the tasks and associated task support content.
- **Hypertext Topic Access.** Topics and resources should be hyperlinked as appropriate in the table of contents and between content pages.



EPSS Special Notices

Highlight special information the reader needs to know to accomplish what they need to do, what they need to know to prevent damage to equipment, or to prevent injury. Special notices are to be contained in its own box with an easily identifiable icon representing the notice. Boxes should be distinguishable from each other and other text on the page through the use of subtle outlines and transparent colors for each type of notice. Lower case letters will be used in the notices and **bold** or underline will be used for emphasis as needed. The table below outlines the definition of each notice and location on the page. An example is provided in the checklist.

- Note** Notification of installation, operation, maintenance, or other information that is important to be pointed out, but is not hazard-related. Notes appear below the step in the procedure to which they relate.
- Caution** Indicates a potentially hazardous situation that, if not avoided, **could** result in minor to moderate injury and/or damage to equipment. Can also be used to alert unsafe practices. Cautions are placed above the step in the procedure they relate to.
- Warning** Indicates a potentially hazardous situation that, if not avoided, **could** result in serious injury or death and/or damage to equipment. Warnings are placed above the step in the procedure they relate to.
- Danger** Indicates an imminently hazardous situation that, if not avoided, **will** result in death or serious injury and damage to equipment. This notice should be limited to the most extreme situations. Dangers are placed above the step in the procedure to which they relate.

Deliverable Requirements

An EPSS requires the following deliverables during the design phase:

- Design Document
- Design Flow
- Storyboards
- Functional Prototype
- Other planning artifacts

Design Document

The Design Document for an EPSS should include:

- Introduction
 - Introduce any reports, interviews, etc. with findings related to performance and performance gaps relevant to the EPSS, identified issues, and scope of the project
 - Introduce acronyms
 - Give a description of the target audience for this performance support tool
- Design Application
 - List the software that may be used to develop the product, design elements that you will include (such as a Table of Contents or a Glossary of terminology), and any templates that may be used. Adobe RoboHelp is typically used for the production of EPSS
- Design Content
 - Include a validated task list. Tasks on this list are drawn from the major accomplishments from the front-end analysis and are validated with the subject-matter expert

- List the types of media requirements (photos, videos, animations, or other elements) anticipated to be included in this project. Also, list any media that may be developed and included if during development, additional needs are identified
- Evaluation
 - Include information on the test and inspection point (e.g., efficacy, usability, accessibility)
- Design Team
 - List the design team

Design Flow

The design flow typically does not show individual screens. Instead, it represents the sequencing of how all the tasks for which will have a performance support within the EPSS. It does not indicate all of the specific menus, but may provide an example that represents how these will be handled. Indicates which features will always be available to the learner (help, glossary, etc.). A detailed table of contents can suffice as a design flow.

Functional Prototype

Prototypes are not required for products that will follow established patterns of presentation or interaction. New patterns require an approved prototype.

The functional prototype will include:

- Major structural components
- Templates
- Navigation
- Media/interactivity

Storyboards

Storyboards establish all of the content details and media architecture that will be applied in the developed output.

Storyboards will include:

- Major structural components
- Organization
- Technical sequences
- Content
- Media

Planning Artifacts

Each project may have differing media requirements. The following artifacts will be established prior to development, as needed:

- Photo shot/media construction list
- Media selection justification

2.4.3 FOT Design

Refer to the FOT Process guide for guidance on designing instructor-led virtual training.

2.3.4 Designing for Blended Solutions

Blended Learning is defined as training by multiple delivery systems and taking advantage of their benefits. For example, web-based training could be used to provide foundational knowledge, followed by classroom training used to provide hands-on applications, supplemented by videoconferencing to provide follow-up and answers to questions. An EPSS can also pair well with field-based On-the-Job-Training (OJT) activities and tasks that are not performed frequently.

In addition to utilizing a combination of delivery approaches, which may include combining resident and non-resident instructional methods, group, and individual study, structured on-the-job-training and Self-Paced e-learning, or micro learning and on-demand videos, blended learning can extend well beyond formal courses to include both synchronous and asynchronous activities, as well as social, collaborative learning and the use of performance support materials. There is more than one way to create blended learning, not just a mix of face-to-face and online. Blended learning makes use of several media platforms in one curriculum via the combination of formal and informal learning events.

Targeted blended media elements, complementary media-based activities, and local assessment tools do not require approval beyond the Training Division. If additional resources or curriculum outline changes are required, contact the Training Manager or Program Manager for approval. Contact the ADL Program staff with any questions concerning enterprise deployment.

2.4 Phase 4: Development

2.4.1 Overview of Development Activities

Design decisions are translated into outputs in the development phase. Media elements are created, and the solution is assembled during this phase.

Creation of an instructional or performance solution may present timeline and/or deliverable risks to both the client and the developer. To mitigate these risks, it is best to build risk control increments into the delivery schedule. This provides opportunities for incremental adjustments throughout the development process rather than at the point of finished product delivery. Confirmation and validation of assumptions in small doses prevents large doses of scope creep or customer dissatisfaction.

Development processes may vary by the product type. Carefully constructed plans come together in the development phase. A well-defined deliverable is critical to a quality development effort. Development effort expended before approval of design deliverables is considered "at risk."

- Templates are loosely defined with guidelines that will be followed unless there is a documented and approved reason to do otherwise
- Professional services are expected for contracted deliverables. The definition of professional services and the determination of quality outputs are determined by the customer

In addition to iterative outputs, the government requires the development team conduct quality assurance testing for functional/technical accessibility compliance on all ADL solutions. The following reports are required for acceptance:

- SCORM (Shareable Content Object Reference Model) Test Logs indicating that the course meets SCORM conformance for solutions that will be hosted on the LMS
- Accessibility Testing Report indicating the course meets Section 508 Compliance in accordance with Section 508 Accessibility Requirements
- Media Inventory that clearly indicates copyright and licensing, as applicable

Acceptance Testing criteria are provided later in this chapter. Developers should be familiar with these criteria to minimize iterations.

The outputs of the development phase are source files and published files. Typically, the Coast Guard utilizes the following file types:

ADL Solution or Media Type	Source File Type(s)	Published Files
SPeL	.story	SCORM package (web files and imsmanifest.xml)
EPSS	.rhpj or .xpj, and associated project files	Web files (e.g., .html, .js, .css, .xml)
FOT	.docx, .ppt, .pdf	.pdf
Video	Raw, .ppj, .prproj, .aep, .aet	.mp4, .mov, .avi, wmv
Images	.psd, .ai	.png, .jpg, .gif, .cgm, .svg
Audio	.sex, .wav	.wav, .mp3

Appendix B: Technical Requirements provides a detailed description of the core technical requirements for deployment of technology solutions in the Coast Guard environment.

2.4.2 Principles and Guidelines

Styles and Navigation Templates

Navigation, interface, template sets, and presentation styles shall support the effective packaging of the instructional or performance support strategy as outlined in the design document and storyboards. The use of templates provides a means for rapid development and deployment of ADL products.

Template and Interface Requirements

- **Consistency.** Screen conventions, fonts, color schemes, presentation aesthetic, window dimensions, and location and construction of navigation controls shall be consistent within a product and product series.
- **Usability.** Navigation and presentation elements should be functional and consistent within a product and product series. Exercise caution with the following features:
 - **Windows:** “Popup” windows should be avoided due to SCORM communication issues
 - **External Links:** Linking outside the LMS may create span-of-control issues that can result in broken links
 - **Responsiveness.** Interface and template elements shall provide feedback appropriate to the navigation context

Visual Considerations for ADL Development

The principles in the tables below can be used to provide both subjective and objective measurement for building ADL elements. Refer to the ISD ADL QA checklist in Appendix G for specific expectations. These principles apply to all facets of the experience including visual elements:

Element	Principle
Contrast	<ul style="list-style-type: none"> ➤ Contrast can help to organize information. Titles, headings, subheadings, and paragraph breaks make it easier for a reader to interpret information and create a mental model. ➤ When combined with strategic alignment and proximity, contrast can help produce strong focal points. ➤ Contrast can make information easier to see and can be executed by contrasting size, color, font, texture, and shapes. ➤ Contrast is a critical component to accessibility and can greatly improve the learning experience for a learner with diminished sight. Refer to the Revised Section 508 standards for specific criteria.
Repetition	<ul style="list-style-type: none"> ➤ Repetitive elements include fonts, lines, bullets, colors, design elements, formats, shapes, and spatial relationships. This repetition creates a consistent aesthetic that unifies all parts of a design. ➤ Repetition helps to organize, unify, and add visual interest to a presentation.
Alignment	<ul style="list-style-type: none"> ➤ Nothing in a presentation should be placed arbitrarily. Each item in a presentation should have a visual connection with something else on the page. ➤ Alignment helps to create visual unity on a page.
Proximity	<ul style="list-style-type: none"> ➤ Group items together so that related items are seen as a cohesive group. ➤ If there are several items on a screen, try to separate items into groups to create visual units. Use white space to clearly announce visual units. ➤ Do not fill the corners or edge of the screen. Close placement of elements to the edges reduces focus

2.4.3 FOT

Refer to the FOT Process guide for guidance on developing instructor-led virtual training.

2.4.4 Instructional Videos—#CGHowTo

For detailed guidance on how to create, evaluate, and submit #CGHowTo videos see the [#CGHowTo Performance Support Page](#).

2.5 Phase 5: Testing

Once an ADL solution is developed, it must go through testing to ensure the integrity of the instructional design, functionality, and quality of the product.

2.5.1 Types of Testing

Design Testing

Design testing will be at the early stages of the project. Design testing examines factors such as:

- Performance focus
- Organization and Instructional Design

Refer to the ISD ADLQA checklist in Appendix G for a comprehensive list of testing criteria.

Accuracy Testing

Content accuracy is tested by matching the final product to the approved storyboards. While accuracy of the content contained in the design flow and storyboards should have been validated and approved by Subject Matter Experts (SMEs) designated by the Program Manager before the product entered the development phase, accuracy testing gives a final check to ensure the content in the developed product is accurate.

Technical Testing

Technical testing evaluates technical compatibility and function. Testers evaluate the following elements during technical testing:

- Runtime Functionality
 - Does the product meet functionality requirements?
 - Does the product load to the LMS and trigger completion?
 - Do screens load in a reasonable time and provide load feedback?
 - Do all features work?
 - Do all links work?
- Runtime Packaging
 - Is the packaging logical?
 - Does the package contain very large files?
 - Does the package contain redundant or unnecessary files?

The technical test also includes criteria to evaluate the user experience. The following elements will be evaluated during usability testing:

- Clarity of communication
- Logical navigation flow

Accessibility Testing

Accessibility testing evaluates conformance to Section 508 standards. Prior to acceptance testing during internal review, developers will provide a report of accessibility. This report shall include the methods used for testing accessibility.

The ISD ADL QA checklist in Appendix G details 508 requirements and serves as an accessibility report.

Efficacy Testing

Efficacy testing evaluates the effectiveness of the solution. This normally requires a controlled user test and requires the design of measurement instruments to provide a baseline and post

experience measurement of performance readiness. These instruments may vary but will generally consist of a pre and post-course survey and test.

2.5.2 Testing Activities

As part of an iterative review process, the various types of testing described above will be employed to conduct the Testing Phase. It is recommended to divide the testing phase into four activities:

1. Instructional Design Review
2. Beta Test
3. Pilot Test
4. Acceptance Testing

Acceptance Testing by FC-Btm is required for all SPeLs that will be hosted on the Production LMS.

Instructional Design Review

The Instructional Design review is the most comprehensive. During the instructional design review, the project lead must ensure that design, accuracy, technical, and accessibility testing occurs. Once the review is complete and all elements have met requirements per the ISD checklist, all course files will be sent to an internal QA reviewer for testing on the applicable CG development server. All SPeLs must be tested on the Development CG LMS. See Appendix G for the ISD ADL QA Checklist.

Beta Test (for functionality, typically with SMEs)

[SPeL, EPSS, FOT, Blended]

Beta testing primarily focuses on efficacy and technical testing using a learner population sample. It may also incorporate design and accuracy testing. If a learner population is unavailable, the SME or Program must serve as participants. This type of testing typically occurs on the applicable CG development server.

Pilot Test (user testing, with target audience)

[SPeL, EPSS, FOT, Blended]

A pilot is a trial run of a course, class, curriculum, program and/or test instrument, with the end user in mind, to improve or revise a product or process. The focus of a pilot is on efficacy of the test. Generally, fewer revisions are expected than during a beta test. When piloting a SPeL, it is best practice to host it on the production LMS so that users may receive credit for completion.

Acceptance Testing (for solutions hosted on LMS, EPSS)

Final QA (508)/functionality by FC-Teps/FC-Btm

Once the course has been developed, the package will need to be tested on the development server prior to final acceptance testing by FC-Btm. Acceptance testing comprises technical and accessibility testing strategies.

Internal QA Review

Internal QA is performed by the entity that oversaw the development of an ADL Solution. The content, functionality/usability, technical requirements and 508 conformance are reviewed on the applicable CG development server. If there are issues found during the review, the developer will be notified. Once all elements pass QA checks, a Course Deployment Form (CDF) must be

completed and submitted to FC-Btm to load the course onto the Production CG LMS. See Appendix H for the Internal ADL QA checklist.

FC-Btm Review

FC-Btm conducts final QA of the functionality, usability, and technical requirements before uploading the course to the appropriate catalog on the Production CG LMS. See Appendix I for the FC-Btm ADL QA checklist.

2.6 Phase 6: Deployment

Once product development is complete, the ADL solution must be prepared for hosting on its respective platform. See Media Requirements table 2.3.1 for specifics on the appropriate platform.

2.6.1 Delivery Agreement

While the agreement can signal the COR to recommend payment and indicate final acceptance, this form itself does not provide acceptance.

2.6.2 Delivery Requirements

Source File Delivery Requirements

Source materials shall be delivered with the final product. See Production Structures and File Naming in Appendix B: Technical Requirements for structure and naming requirements.

Project Recordkeeping Requirements

Once a project has been accepted and deployed, all records of the course shall be committed to an electronic archive. An example of the electronic archive is illustrated in the source file delivery requirements.

The archive contains the following items and is kept on file with the Solution Lifecycle Manager:

- Signed Alignment Agreement (see Appendix D)
- Curriculum Outline
- Project Plan
- Design Document
- Design Flow
- Testing Results (e.g. accessibility, beta, pilot, etc.)
- Signed Delivery Agreement (see Appendix K)

2.6.3 Deployment for SPeLs

Courses that are deployed on the LMS have additional requirements:

- Must be published and delivered to current technical standard (currently, SCORM 1.2). Refer to FC-Teps for the latest technical implementation requirements. Once the course or SCORM package has been accepted and tested on the development server, technical staff will upload the files to the fetch server upload folder (\\fetch.uscg.mil\File_Share\Development\Upload_Production).

- A course deployment form (CDF) must be completed and approved for each course prior to deployment to the production server. This form captures the course structure for courses with multiple SCOs, the desired implementation settings. This form is normally completed by the Training Manager. Consult with FC-Teps for a copy of the course deployment form.

2.7 Phase 7: Evaluation and Lifecycle Sustainment

The purpose of evaluation is to ensure that the ADL solution is effective, efficient and continues to address the business goals. Decisions about revisions for future course iterations can be made after evaluating the strengths and weaknesses of the ADL solution post deployment. The ultimate goal of evaluation is to ensure that the ADL solution improves performance in the field.

While formative evaluation is part of the design and development process, summative evaluation reviews the solution after it has been implemented. It measures outcomes in terms of learner's opinions about the product, test results and the learners' job performance after the ADL solution.

Dynamic feedback loops are very important in the instructional design cycle. Evaluation of the ADL solution feeds back into the process with help from the Training Manager, Project Manager and Solution Lifecycle Manager who maintain the pulse of the solution's effectiveness, relevance and content viability. Each ADL solution will have an established review cycle; at strategic points within the sustainment phase, the solution's evaluation information will be consolidated and reviewed with the following determinations being made:

- If the performance need still exists, then the content viability is reviewed.
- If the content is deemed relevant and viable, then the course is left alone and the review cycle is reset.
- If the performance need still exists, then the content viability is reviewed. If content is deemed out of date or incorrect, then the course is put into the "Solution Revision" phase. Once it is revised and again viable, then the solution re-enters sustainment phase.
- If the performance need no longer exists, then the course is prepared for disposition (i.e. the course is cataloged into a "cold storage" element) and removed from the servicing infrastructure.
- Post-deployment evaluations will vary by product and shall be defined in the alignment agreement and delivery agreements. At a minimum, Kirkpatrick's Level 1 and Level 2 evaluations shall be conducted.

Review cycle monitoring for EPSS products is built into the [EPSS Catalog home page](#); the EPSS Product Line Manager periodically audits of the EPSS catalog. FC Cybrarians audit ADL products hosted on the Learning Management System.

Refer to USCG Training System SOP Volume 3 for comprehensive information about conducting evaluations.

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APPENDIX A: Glossary and Acronyms

A.1 Acronyms

ADL	Advanced Distributed Learning
AP	Accomplished Performer
COTR	Contracting Officer's Technical Representative
DSC	Digital Solution Consultant
EPSS	Electronic Performance Support System
FC-Teps	FORCECOM Training Enterprise Performance Solutions Branch
FEA	Front-end Analysis
FORCECOM	The Force Readiness Command
HPT	Human Performance Technology
ISD	Instructional Systems Design
ISS	Instructional Systems Specialist
ITS	Instructional Technology Specialist
JTA	Job-task Analysis
KO	Contracting Officer
LMS	Learning Management System
MT	Mandated Training
OJT	On-the-Job Training (OJT)
PM	Program Manager
PWS	Performance Work Statement
QA	Quality Assurance
RFA	Request for Analysis
RFD	Request for Development
RFP	Request for Production
SCORM	Sharable Content Object Reference Model
SLM	Solution Lifecycle Manager

SME	Subject Matter Expert
SOW	Statement of Work
SPeL	Self-Paced eLearning
TM	Training Manager
TRACEN	Training Center
VT	Virtual Tour
VTT	Virtual Task Trainer
WBT	Web-based Training
WT	Workforce Training

A.2 Glossary

accomplished performer	An individual who routinely produces accomplishments at or above standard. Often intended to mean the best performer currently on the job; a person whose skill or performance exemplifies the optimal or desired state. A subject matter expert may or may not qualify as an accomplished performer.
accomplishment	The outcomes or products of individuals and or groups that are valuable to organizations.
ADDIE	An instructional systems design (ISD) model that employs a systematic approach to training. Each phase has outcomes that provide input for the subsequent phases. The acronym stands for each stage of the process: Analysis, Design, Development, Implementation, and Evaluation. The ADDIE model is the formally recognized ISD model used by Department of Homeland security components.
ADL	Advanced Distributed Learning (ADL) is leverages the full power of computer, information and communications technologies to tailor instruction and its delivery to support individual/organizational learning needs. ADL is structured learning or performance support that may be self-directed, self-paced, facilitated, or any combination of these access methods.
assessment	The act of systematic information collection. This term is often used interchangeably with evaluation but is also used in other contexts such as needs assessment where there is no evaluation context.
authoring software	Computer software programs designed to aid in the development of computer-based or web-based training products.

behavior	The actions (tasks and steps) a person takes to produce an output. Actions can be either overt (i.e., observable) or covert (i.e., cannot be observed such as thinking or decision-making).
blended learning	A performance intervention combining any of two (or more) training modalities.
branching	An instructional technique in which the student's next step of instruction is determined by the student's last response. In automation, the next step may be determined by the pattern of responses to a series of items relating to the subject matter.
cognitive domain	A major area of learning which deals with acquiring knowledge (as opposed to affective or psychomotor skills). It includes the mental processes of perception, memory, judgment, and reasoning.
competency	Observable, measurable skill, knowledge, ability, behavior, and other characteristics that an individual needs to perform work roles or occupational functions successfully.
concept	A class of people, objects, events, ideas, or actions which are grouped together on the basis of shared critical attributes or characteristics. Concepts represent a group of solid objects, such as an airplane or book or abstract ideas, such as leadership and honesty.
condition	The component of an objective that describes the situation, environment, or limitations in which the learner must exhibit the specified behavior.
consultant	A person who can provide valuable and pertinent advice generally drawn from a high degree of broad administrative, professional, or technical knowledge or experience. When an agency requires public advisory participation, a consultant also may be a person who is affected by a particular program and can provide useful views from personal experience.
correspondence training delivery	Self-study course material: training provided via the assignment of non-interactive methods such as a book, document, regulation, and manual.
cost-benefit analysis	An examination of expected or perceived costs in relation to expected or perceived gains, typically conducted when contemplating new actions or considering new interventions.
COR	The contracting officer's representative (COR) provides domain specific expertise in the review of delivery increments for any contracted effort.
course	A series of lessons related by a common goal for which student completion is documented.
course administrator	The approval authority for a validated course that has been developed for implementation on the LMS. For courses with a designated training center, this role is typically filled by a Schoolhouse or PSB Chief. For courses without a designated training center, the FC-Teps Branch Chief provides approval authority.

course map	A chart that depicts the designed sequence of events for a course.
critical task	A task performed by an individual which is essential for mission accomplishment. It is identified through the application of a task selection model.
criticality	A factor used to determine how essential a task is to job performance.
cue	A signal that performance is required. An initiating cue is a signal to begin performing a task or task-performance step. An internal cue is a signal to go from one element of a task to another. A terminating cue indicates task or step completion.
curriculum	A curriculum is a group of training courses or materials for an individual course designed to teach a range of skills and behaviors that are useful in a particular job.
curriculum outline	Curriculum outlines (CO) are required for all USCG resident and nonresident training courses. A standard format documents the performance objectives, training resource requirements, identifies improvements or changes, maintains agreement between performance requirements and training needs, and facilitates the review and approval process.
declarative knowledge	Declarative knowledge tells us why things work the way they do, or that an object or thing has a particular name or location. It includes information about the concepts and elements in the domain and the relationships between them.
deliverable(s)	Any measurable, tangible, verifiable outcome, result, or item that must be produced to complete a project or part of a project. Deliverables are typically subject to approval by the project sponsor or customer.
designer	Creates the framework for the solution. The organization employs designers both internally and by contract across a wide range of expertise areas. A designer may be involved in the selection, design, and development phases
developer	The developer creates the functional ADL product. The organization employs developers both internally and by contract across a wide range of expertise areas. A developer may also be involved in the selection, design, and development phases.
difficulty	A factor used to determine how difficult it is to perform a specific task. Task difficulty is often used in conjunction with task importance and task frequency to make determinations as to which tasks should be selected for formal training, which tasks should be job aided or some combination of the two, and which tasks should not be trained.
distracter/or	In testing, incorrect answers provided as choices in multiple choice or matching test items.

domain of learning	A broad classification of learning types. The three widely accepted domains are the cognitive (thinking, understanding), affective (attitudes, values), and psychomotor (physical skills).
e-Learning	The acquisition of knowledge that takes place through electronic technologies and media.
enabling objective (EO)	A statement that describes a physical or thinking skill (i.e., discrimination or generalization) and defines in measurable and observable terms a step necessary to accomplish the related terminal performance objective (TPO).
environment	Environmental influences on performance are the workplace provided factors of policies, procedures, instrumentation, ergonomics, tools, climate, etc. which facilitate the accomplishment of a task. The absence of or deficiencies in any of these factors can have an adverse effect on performance.
EPSS	An electronic, packaged (self-contained) Advanced Distributed Learning (ADL) solution or job aid that unifies relevant support and reference information, media, and guidance at a single, accessible point, and is organized in a logical and consistent way to not cause a significant decrease in performance. An EPSS can be built into an equipment's operating system or provided as a stand-alone software application or a handheld data assistant.
evaluation	A multilevel, systematic method for gathering data about the effectiveness of training programs. Measurement results are used to improve the offering, determine whether the learning objectives have been achieved, and assess the value of the training to the organization.
exercise	An exercise provides a direct or abstract opportunity to practice a skill or apply a concept.
extant data	Records and files collected by an organization reflecting actual employee performance and its results (for example, attendance figures, help desk tapes, callbacks for repair, employee evaluations). Also includes organizational documents such as policy, procedural handbooks and doctrine.
external evaluation	See Summative Evaluation.
facilitator	A learning environment leader who guides individual or team learning in a classroom, laboratory, or practical exercise setting. As opposed to an instructor who provides the learners with information, the facilitator functions more as a coach or guide, eliciting the information or solutions to problems from the learners themselves.
FEA	Front-end Analysis. A component that precedes the first phase of the ISD process (Analysis). In this phase performance deficiencies are confirmed, the job is analyzed, tasks are selected for training, task performance measures

are constructed, existing courses are reviewed and the instructional setting is tentatively determined.

feedback	All processes, procedures, and methods by which information is generated and given back to individuals, groups or an entire organization about how well they performed in certain situations.
formative evaluation	Evaluation designed to collect data and information that is used to improve a program, product, or instruction; conducted while the program is still being developed. See also Evaluation, Summative Evaluation.
frequency	A factor used to determine how frequently a specific task is performed. Task frequency is often used in conjunction with task importance and task difficulty to make determinations as to which tasks should be selected for formal training, which tasks should be job aided or some combination of the two, and which tasks should not be trained. See also Task Selection Model, Difficulty-Importance-Frequency (DIF) model.
GOTS	Government Off-the-Shelf
HPT	A group of methods, processes, and approaches used to improve human performance by solving or avoiding problems, and taking advantage of new technologies, methods, and other opportunities. HPT is a systematic approach to improving human productivity, competence, and capability. The goal of HPT is to identify and develop a set of interventions (or solutions) that solve or mitigate barriers to performance (e.g., lack of skill or knowledge, a flawed environment, ineffective reward or incentive systems, poor motivational structures, wrong people assigned to jobs, or new or unique equipment or systems).
implementation manager	The implementation manager is the business unit responsible for hosting the ADL product. For example, FORCECOM Business Technology Management Branch (FC-Btm) is the implementation manager for solutions hosted on the CG Learning Management System (LMS). FC-Teps is the implementation manager for solutions hosted in the EPSS catalog.
importance	A factor used to determine how important a specific task is to the overall occupation. Task importance is often used in conjunction with task difficulty and task frequency to make determinations as to which tasks should be selected for formal training, which tasks should be job aided or some combination of the two, and which tasks should not be trained. See also Task Selection Model, Difficulty, Importance, Frequency (DIF) model, Criticality.
instruction	The delivery of information to enable learning. The process by which knowledge and skills are transferred to students. Instruction applies to both training and education.
instructional solution	Solution identified from an analysis that are associated with skills/knowledge gaps.

instructional systems design (ISD)	Instructional Systems Design (ISD) is a formal process for producing all types of training. A typical ISD model includes phases; analysis, design, development, implementation, and evaluation. A standard process of design is used so it can be reproduced to achieve consistent and measurable results for continuous process improvement.
instructional technology	The use of technology (computers, compact disc, interactive media, modem, satellite, teleconferencing, etc.) to support learning.
intervention	The recommendations that are the outcomes of a performance analysis. Interventions are designed to correct a problem or change a situation and improve performance.
job aid	A storage place for information, other than the brain, that is accessed on – the-job, in real time and puts the user under stimulus control. A guide that supports on-the-job performance by helping personnel execute tasks otherwise done infrequently, are too complex to memorize, or are comprised of critical steps. Job aids may supplement or replace training.
JTA	An analysis during which information about the difficulty, importance and frequency of tasks for a job or function is gathered, and recommendations for how best to support the task-level performance under review are provided. Job aids and train/no train decisions utilize task data collected on each of the tasks determined necessary to perform the particular job.
KO	The contracting officer (KO) is responsible for execution of any contracted effort and has final signing authority for acceptance of any delivery.
learner	One who acquires new knowledge, skills or attitudes which may be obtained coincidentally during daily activities, through self-study or by attending a program of instruction.
learning	A change in behavior that can be measured. Learning occurs as a result of knowledge transfer and includes gaining knowledge, skills, or developing new behaviors through study, instruction, and experience.
lesson	A portion of a course which may contain multiple topics with learning objectives and information to be imparted to the student. See also Course.
LMS	A software tool that: manages user learning interventions; allows users to register, complete, track electronic training (e.g., mandated training (MT), blended solutions (part e-Learning and part resident)), and take surveys; includes tools for competency management, analyzing skills-gap problems, succession planning, educational analysis; and may include resource management tools (e.g., textbook ordering, classroom booking). The Coast Guard's LMS tracks completion of resident training programs at training centers, DoD facilities, and commercial schoolhouses.
mastery	Meeting all the specified requirements for a specified domain of learning (cognitive, psychomotor and/or affective), a combination of each, or all three

domains of learning. Some form of measurement is required to determine mastery.

media	A means of conveying or delivering information. Examples of media are paper, film, videotape, broadcast television, computer program, etc. As media capabilities have evolved, specific types of media have emerged within the digital and web-native space such as Flash Media (interaction transport) and 3D Interactions (real time representations of geometry),.
model	A representation of a system that analyzes or depicts a process which leads to insight. (i.e., diagram, flowchart, template or job-aid).
module	A stand-alone instructional unit that is designed to satisfy one or more learning objectives. It is a separate component complete within itself that can be taught, measured, and evaluated for a change, or it can be bypassed as a whole. A module can be interchangeable with other modules and used for assembly into units of different size, complexity, or function. A module consists of one or more lessons.
motivation	The personal desire to perform. It is comprised of both value and confidence. Value is knowing why desired performance is important and confidence is the belief by the member that they can do it.
mandated training (MT)	Mandated Training (MT) is required by regulation, law, statute or executive order. Agencies have an obligation to identify, monitor and record completion of these requirements.
objective	A specifically defined ability or outcome gained as a result of a planned activity. There are specific types of objectives intended for desired outcomes, including terminal, enabling, and performance objectives.
on-the-job training	<p>A method of teaching new skills and knowledge while performing job duties.</p> <p>Structured On-the-Job Training (SOJT) is an activity where knowledge, skills and abilities are attained at the worksite by use of a qualified OJT Monitor/instructor who introduces tasks in a priority sequence of activities, provides feedback, and measures and evaluates outcomes. Formal OJT can yield a productive member of the organization in an efficient and cost-effective manner.</p> <p>Unstructured On-the-Job Training (OJT) is an activity where knowledge, skills and abilities are attained at the worksite by employees without a planned, measured or a monitored approach. Unstructured OJT lacks consistency and outcomes may be unpredictable.</p>
performance analysis (PA)	A process where the behavior of individuals or organizations is studied to identify training solutions and provide a comprehensive list of recommendations to eliminate performance gaps and improve performance; also known as a (performance) gap analysis or (performance) needs assessment.

performance analyst	The performance analyst collects, analyzes, and reports data surrounding the performance gap, based on the business requirements and goals of the client.
performance consultant	The performance consultant recommends an intervention to close the performance gaps that are aligned with the business goals of the client.
performance systems branch (PSB)	Entity responsible for properly aligning curriculum design processes, tools, and local policies with formal Coast Guard Training System policies and procedures for designing resident instruction, e-learning, and enlisted rating advancement training system support deliverables.
pilot	A trial run of a course, class, curriculum, program and/or test instrument that provides information to improve or revise a product or process.
practice	A systematic performance of task(s) to gain proficiency using one or more domains of learning.
pre-design	The pre-design phase validates method selection and provides critical inputs to the statement of work and the design phase. These inputs include details about the audience, performance requirements, detailed task data including step level detail, and training requirements
pre-design analysis	The pre-design analysis bridges the gap between the performance analysis (FEA) and the design of a training solution. Inputs to the pre-design analysis includes available analysis data and recommendations, audience analysis data, and performance requirements. The pre-design analysis focuses the scope of the solution and may uncover critical elements including cognitive tasks.
procedure	Sequence of steps that result in completion of job task(s).
process	A planned series of actions having input(s) and output(s) that advance a material or procedure from one stage of completion to the next to achieve the intended result.
project manager	The project manager provides project execution oversight for an ADL-development effort. The project manager is ultimately responsible for the creation of an ADL Solution. He or she will assign a project lead.
project lead	Leads the design and development of an ADL project in scope and/or function. Responsible for project execution, resource assignment, and client interaction.
prototype	A functional version of a new process and/or product, usually in an unfinished state, whose effectiveness and efficiency will be tested. The version is then revised, improved and then implemented.
quality assurance (QA)	A process used to monitor, evaluate and report the adherence to processes, procedures and standards to determine if training programs, courses, instructors and products meet certain predetermined standards.

remediation	A process that provides supplemental instruction in order to correct learners' performance or to reinforce learning objectives.
requirement	Functionality that must be part of the program or system based on the needs analysis, analysis of the target population, and job and task analyses.
response	Any behavior that results from stimuli. This may involve a single word response, selection among alternatives (multiple choice), the solution of a complex problem or the manipulation of buttons or keys.
risk mitigation	Part of the planning process that seeks to reduce the probability or impact of a risk below an acceptable threshold.
scenario	Scenario-based exercises are based on the concept of situated cognition. This implies that knowledge cannot be internalized independent of context.
simulation	A realistic representation of a system, subsystem, situation, or device. Simulations provide an opportunity for the student to practice procedures, tasks, or problems in approximation to real-world scenarios.
skill	The ability to perform a psychomotor or intellectual activity that contributes to the effective performance of a job task.
SME	Subject matter experts (SME) provide domain expertise that helps to define the content and context for ADL solutions.
SPeL	Instruction that provides learning solutions to support Coast Guard mission requirements; is accessible on demand via a computer using technology appropriate to the user's environment; focuses on supporting a measurable change in behavior or attitude that provides tangible benefits to the mission; and whose solutions are deliverable over a network to ease maintenance updates and tracked to provide decision support and accountability.
standard	The minimum level of acceptable performance.
step	An essential, clearly delineated part of a task. Steps are usually executed in sequential order but are not necessarily contiguous. See also subtask.
storyboard	A series of diagrams or illustrations which support the sequence of content and/or action that will be contained in a project; includes such elements as images, animation, movie segments, sound, text, and navigation aids/paths.
subtask	Provide information, directions, and activities in the order in which they should be performed. The procedures that perform together make up a task.
summative evaluation	A form of evaluation designed to follow a formative evaluation to obtain data regarding student performance, worth of the program or product and to make recommendations for improvements.
survey	The collection of information from a common group through interviews, questionnaires, and other means to a representative sample of that group.

system	A group of objects or units combined to form an organized framework working together to achieve results.
task	An essential part of a job; it is a unit of work activity that is a logical and necessary action in the performance of a job. A task has an identifiable start and end point, and it results in a measurable accomplishment or product.
task analysis	The action of defining the smallest essential part of a job— the task—and breaking it down into its subtasks. The purpose is to get to the basic learning objectives that must be accomplished for the learner to improve his or her performance. Gathering this information may involve observation and careful interviewing of both expert and novice. Task analysis information can be used as the foundation for developing instructional objectives, identifying, and selecting appropriate instructional strategies, sequencing instructional content, identifying, and selecting appropriate instructional media, and designing performance evaluation tools. It is always done in the context of a specific job.
task condition	Condition or circumstance under which a task is performed, including the physical environment and resources provided. They are used in task analysis and when designing criterion referenced objectives i.e., task, conditions, standards.
template	A pre-built document used as a pattern in a development process.
terminal performance objective	A statement that describes the task students will be required to do upon completion and graduate from the course.
test item	A component of a test which requires a response by the test-taker, and which is scored separately. Items are combined in a test to measure a student's learning or performance.
topic	The basic organizational unit of instruction covering one or more closely related learning objectives.
training aid	Any device or method used to enhance a learning experience, to include, but not limited to technology, print media and other sensory materials.
transfer of training	The ability to effectively apply knowledge and skills from training to the employee's job.
tutorial	An instructional activity in which information is presented or a skill is modeled for transferring a knowledge or skill. Tutorials are effective for presenting facts, rules, principles, or strategies. Practice and assessment are typically included in a tutorial.

APPENDIX B: Technical Requirements

This appendix defines common technical requirements (requirements, prohibitions, allowances) for any digital solution serving performance support and training purposes. Unless noted, requirements established in this SOP generally will not be waived. Those still seeking a waiver can submit a business case and specific requirements to your designated Project Lead/Contracting Officer Representative (COR) for approval through FORCECOM Enterprise Architecture Program and C5I Special Use Request.

B.1 Deployment Specifications

All solutions must run on approved Coast Guard systems. The Command, Control, Communications, Computers, Cyber, Intelligence Service Center (C5I) sets the parameters for the technology framework for which all solutions are implemented. See the [IT Asset Management](#) site for the most current Hardware and Software Lists.

Solutions that require additional plug-ins and installations require vetting and approval through both the [FORCECOM Enterprise Architecture Program](#) and [Special Use Request](#). Review of these requests require extensive efforts, in particular due to cybersecurity constraints. Designers and developers should use approved Enterprise Applications to streamline implementation.

NOTE: CG Auxiliary and users of SIPRNet are authorized alternate software configurations.

At the current publication of this SOP, enterprise-approved solutions are deployed through one of the following web-based platforms: the learning management system, the EPSS site, and milSuite.

B.1.1. Learning Management System

Content owners with solutions that require student completion and score reporting data can host their ADL solution on the learning management system. The Coast Guard employs a SCORM-conformant learning management system, which can track and report user interactions. This system allows for records management and in some cases, automated cross-platform reporting. The Learning Management System supports solutions that [meet SCORM specifications](#). SCORM 1.2 is the preferred published setting. Articulate Storyline is CG-approved development applications for publishing SCORM packages. Articulate Storyline is the preferred application for its more extensive functionality, customization, and source file management.

B.1.2 EPSS Server

The EPSS server is a web server dedicated to hosting electronic performance support solutions. Its reporting capabilities are limited to user access logs. Adobe Robohelp is an approved development application for publishing web files that can be hosted on the EPSS catalog. Articulate is also capable of publishing a web version that can be hosted on the EPSS site. The EPSS site does not have any automated or cross-platform tracking or reporting.

B.1.3 milSuite

Unlike the other hosting platforms, milSuite also serves as the development application. Classroom management of solutions deployed on milSuite are not managed by FORCECOM and must be

managed by cognizant Program or Performance Support Branch. Solutions developed in milSuite are not exportable from milSuite. Visit [milSuite Classroom](#) to learn more.

B.2 Delivery Requirements and Distribution Approval

This section addresses delivery and approval requirements. Additional requirements may apply to specific types of deliveries (EPSS, SPeL, etc.)

- Use Off-the-shelf or government owned tools to develop or package solutions. Do not use proprietary toolsets to develop technology solutions without formal approval.
- Solution providers shall complete delivery and testing checklists listed in the product testing section. Checklists must accompany final deliverables for QA testing.
- Test solutions for functionality both in a local and/or development environment, as well as in a production environment for any product intended for centralized distribution.
- Route all deliveries including incremental tests, integration tests, and final delivery packages through the Project Lead designated for the project.
- Deliver all source materials used to build the solution with the final accepted version of the solution.
- Source materials for 3D models and animations shall accompany any delivery including derivatives or outputs of these models. Include separate animation files for individual animations. Also include common compatibility files (FBX or Collada) in addition to the source format for model source deliveries.
- Materials and solutions shall comply with Section 508 (29 U.S.C. 794d) to provide comparable experiences and access to all users.

B.3 Tools and Practical Requirements

This section addresses tool and practical requirements. Additional requirements may apply to specific types of deliveries (EPSS, SPeL, etc.).

B.3.1 Development Considerations

- | | |
|-------------|---|
| Code | Code describes high-level programming languages, scripting, and markup languages. The following considerations apply to Self-Paced eLearning code development: <ul style="list-style-type: none">➤ When possible, use a documented code library or framework (i.e., JQuery)➤ Name methods and functions logically➤ Make code easy to locate, code on the main timeline or in external class files is more manageable➤ Use language versions appropriate to the final deployed version➤ Document the code details including packaging version in the packaging report➤ Comment code often to facilitate later revisions by different developers➤ Use white space to make code easier to read |
|-------------|---|

Graphics Acquisition and treatment of graphic elements is critical to a quality optimized product. Improper preparation of visual elements can impact performance, distract the learner, and create accessibility problems. The following rules of thumb apply:

- Use the most appropriate file type to the application. When in doubt, provide PNG format images
- Scale bitmap images to the target size before importing into the authoring environment. Images shall not be scaled in the authoring environment unless scaling is a requirement of the illustration or interaction

Animation The use of animation should be restricted to instances where animation is beneficial to the attention of the learner. Unnecessary transitions should be avoided (fly in, bounce in, etc.) Animation pacing is a critical but difficult concept to master.

As a rule of thumb:

- Avoid low creeping animations. Appearance transitions should be snappy (~1/2 second)
- Pacing of animation should match the supporting audio

Video Video should be optimized for distance delivery and should use consistent dimensions throughout a course.

Audio Narration samples shall be provided for approval prior to recording narration. Audio shall be of consistent quality and volume throughout the product.

B.3.2 Internal Tool Standards

The tools below are commonly used by internal development resources. Additional tools may be used within the organization for special purposes.

Adobe Creative Suite	Media and web application development
Adobe Robohelp	Help authoring
Articulate Storyline	SPeL assembly
Autodesk 3DS Max	3D Modeling/Animation (complex)
Microsoft Office 365	Communication, documentation, and support materials

Tools listed above are prescribed for internal efficiencies and compatibility. These tools are not endorsed by the U.S. Coast Guard.

Consider the following items when using internet tools in ADL development:

- Developers shall build code assemblies that efficiently place shared elements into mechanisms like style sheets and common javascript files.

- Developers shall add comments to custom code elements to support reasonable maintenance of custom code.
- To minimize maintenance requirements and mitigate the effects of dead links, include linked materials within the content package whenever practical.
- File sizes should be reasonable for web delivery to the target audience.
- Large files should show a loading indicator while loading.
- List licensed or copyrighted media elements on a media inventory. A media element list for licensed or copyrighted media should consist of these fields:
 - Name of the file
 - Description of the file
 - Source of the file
 - Licensing terms / reference to licensing terms

B.4 Production Structures and File Naming

B.4.1 Folder Hierarchy and Organization

Production structures shall be consistent and well organized.

The construction of production and planning structures may vary by project and developer. To gain consistency in expectations and ease of discovery, consider these baseline folder construction guidelines for all projects.

To maintain consistency and predictability:

- **Keep the most important elements at the base of the folder structure.** Do not bury artifacts like alignment agreements, curriculum outlines, and delivery agreements within the folder structure
- **Do not add unnecessary folder or file structures**
- **Separate planning artifacts from production artifacts**
- **Separate production source from published outputs**

The structure suggested below meets each of these rules:

- Project (folder)
 - Files at the root of the project folder
 - Planning (folder)
 - Planning documents (storyboards, outlines, discrepancy reports)
 - Production (folder)
 - Robohelp
 - Audio
 - Video
 - Published (folder)
 - Web (folder)
 - LMS (folder)

Though developers may maintain multiple versions of source materials locally during development, for deliver only a single source artifact for each media element for deliverables and final source archives.

B.4.2 File Naming Conventions

The following rules apply to file names for source materials and published outputs:

- Use lowercase characters
- Do not use spaces
- Use a coding schema familiar to the team
- Keep project folder naming short and simple. Use the project folder and date. For example: projectshortname_2011aug

B.4.3 Internal Production States

Internal production teams will use a structured build and storage practice to ensure consistent configuration management and prevent data loss. Notify the Solution Lifecycle Manager for the solution whenever moving the production archive for a course.

B.4.4 SCORM Requirements and Features

The crucial link of communication between a Self-Paced eLearning product and the LMS is Sharable Content Object Reference Model (SCORM). The protocols established by this interoperability standard provide the means for the content to “talk” to the LMS and the LMS to “talk” to the content.

NOTE: SCORM courses typically cannot be run outside of an LMS environment without producing errors.

Courses intended for deployment on the Coast Guard LMS shall be delivered in SCORM 1.2 conformant packages.

A SCORM course needs to communicate with the LMS using a JavaScript API. Products loaded in the current LMS must be SCORM conformant. The current LMS may run SCORM 2004, but it is not fully supported.

Required SCORM Features

- **Bookmarking.** Lessons will resume from the last accessed location (lesson_location)
- **Completion Tracking.** Lessons will track and submit completion. Lessons will not rely on score/mastery score to calculate completion (lesson_status)
- **Score.** Lessons will submit a score when a test is included in the design. When multiple tests are included, the post-test or mastery test score will be submitted (score.raw)
- **Activity State.** Lessons will recognize the activity completion state for complex activities. Learners will not need to complete activities upon re-entry if they have already successfully completed these activities. Variables are typically handled by the authoring package

SCORM Keywords

While much of the functionality of SCORM is relatively transparent to a developer that employs authoring tools, there are crucial keywords that trigger various events depending upon the learning management system. The tables below describe these functions and their keyword parameters. Unless otherwise noted, values listed in these tables are case-sensitive.

Common Keywords	Use	Value Notes
cmi.core.lesson_location	Stores the current location. Functions as the bookmark for the course.	Read/Write
cmi.core.lesson_status	Stores the status of the lesson.	Completed/incomplete

The following data model elements are presented to provide a sense of the communication features provided between the LMS and the lesson. The authoring environment typically handles the storage and retrieval of data elements.

Data Model Element	Use	Value Notes
cmi.core.student_name	Retrieves the student name from the LMS.	Read only
cmi.score.raw	Stores the learner's performance relative to the range bounded by the values of min and max.	Read/Write
cmi.core.entry	Indicates whether the learner has previously accessed the SCO.	Read only
cmi.core.total_time	Indicates the sum of all of the learner's session times for this lesson.	Read only
cmi.suspend_data	Provides a space to store and retrieve data between learner sessions. Normally used to restore activity state.	Read/Write. SCORM 1.2 specifies minimum 4k field size
cmi.comments	Comments or notes from the learner about the SCO	Read/Write. Retrieval requires reporting access.
cmi.objectives.n...	Provides a data element for granular objective level scoring.	
cmi.interactions.n...	Provides a data element for capture of test item interactions or assessments only. Learning checks will not be recorded as interactions.	

Visit [Technical Overview of SCORM Specification/Standard](#) for a comprehensive Technical Overview of the SCORM Standard.

B.4.5 Testing the Course on the Development LMS

Test developed courses on development environment prior to test to acceptance testing. As mentioned in SCORM Requirements and Features, SCORM test logs are required prior to development testing of content packages. The chart below outlines the steps for accessing the development server.

Development Test Procedures

Test Item	Note
Ensure test logs accompany the submission of a SCORM package for development testing.	Test logs can be generated using the ADL Test Suite or using online cloud based LMS debugging tools like those available at http://cloud.scorm.com . As of August 2011, the development server is only available within the CGDN+ network. Test logs are required for vendor submissions.
If the Coast Guard network is accessible, submit a request to access the development server. Coast Guard network access is required to access the LMS Development Site.	Access this page: https://cgfixit.osc.uscg.mil/ Fill out an application request. Indicate the reason access to the development server is needed.
Follow the steps listed in the DEV LMS SPeL Loading and Testing Procedures Guide.	Submit and wait 48 hours for a response. Contact the ADL Program Office if no response is received in this period. Request this guidebook from FC-Teps

Troubleshooting Common SCORM Issues

If SCORM Package Fails to Load, check the following:

Test Item
The size limit. Check the file size of the SCORM package against the maximum size allowed.
The server could have timed out. <i>Try uploading the SCO again.</i>
The imsmanifest.xml file MUST be at the root of the zip archive. If the manifest file is missing or the zip package contains another zipped archive, the LMS will not load the package. <i>Unzip the SCORM package and check the location of the imsmanifest file.</i>
The imsmanifest file could be malformed. If the file was generated by an authoring tool, try republishing
If hand-coded the imsmanifest, try validating the manifest in a manifest building tool like RELOAD Editor.

SCORM File Names and Storage

- Published SCO's (.zip files) are added to the appropriate folder within OSC's fetch repository ([\\fetch.uscg.mil](http://fetch.uscg.mil)). All SCO's must be named using this construction:
 - coursecode_refname_date.zip ex: 810046_efp_20230323.zip
- Old files should be replaced or deleted. Only one instance of a SCO should be present in the fetch repository.

APPENDIX C: Section 508 & Accessibility

C.1 WCAG Requirements

Chapter 2, Section E205 of the [Revised Section 508 Standards](#) states that electronic content that is public facing or considered agency official communication “shall conform to Section 508 accessibility requirements.” These requirements specify that “electronic content shall conform to Level A and AA Success Criteria and Conformance Requirements in WCAG 2.0.” Per the Revised Section 508 Standards, agency official communication includes “educational or training materials,” therefore it is important FORCECOM personnel are aware of these standards through every stage of the ADL production process.

[Web Content Accessibility Guidelines \(WCAG\)](#) are a set of international standards that explain how to make web content more accessible to people with disabilities. The success criteria that fall under each WCAG “guideline” are written as testable statements, centered around four fundamental Web content accessibility principles:

- **Perceivable:** Information and user interface components must be presentable to users in ways they can perceive.
- **Operable:** User interface components and navigation must be operable.
- **Understandable:** Information and the operation of user interface must be understandable.
- **Robust:** Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

C.2 Universal Design

While Section 508 is a legal requirement, ensuring the accessibility of ADL products is about more than just compliance. Products designed with accessibility in mind benefit *everyone*, including those without permanent disabilities. For example, closed captions are useful for learners in an environment where they cannot use sound, and keyboard accessible courses can be helpful for those who have a broken arm (I.e., temporary disability). Universal Design, a popular framework in the private sector and increasingly well-known in the federal sector, further addresses this idea. According to [Section508.gov](#), Universal Design is “a concept in which products and environments are designed to be designed to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.” Designing with accessibility in mind from the beginning benefits all users.

C.3 Testing for Section 508 Conformance

C.3.1 Web Content

The [USCG Accessible Systems and Technology Program \(ASTP\), Section 508 \(CG-612\)](#) recommends using the [DHS Office of Accessible Systems & Technology’s \(OAST\) Trusted Tester](#) process to conduct Section 508 conformance testing. The DHS Trusted Tester process is a formal, manual testing process using best practices, methodologies, and tools to support accessibility validation of

technology. Using it reduces ambiguity, increases consistency of results, and emphasizes methods that meet Section 508 ICT Accessibility requirements. The DHS Trusted Tester process is based on the [Section 508 ICT Baseline Testing for Web Accessibility](#); a tool agnostic set of tests that Federal agencies are encouraged to use as the basis of developing test processes specific to their needs. These testing procedures informed the development of Section 508 testing items on the ADL QA checklists.

The DHS Trusted Tester program offers free certification for individuals following the completion of a robust training program. Each unit is encouraged to have their own designated, certified Trusted Tester. There are two tools used in the Trusted Tester (version 5) process that may be helpful when testing ADL products:

- **ANDI: Accessible Name and Description Inspector (ANDI)**

Identifies the parts of the code on a web page that a tester needs to evaluate to determine whether page elements are accessible. It can reveal what a screen reader should say for interactive elements.

ANDI is a “favelet” that only works on Microsoft Edge browsers on the Coast Guard network. Installation instructions are found on [Accessibility Testing Tool site](#).

- **CCA: Colour Contrast Analyser**

Compares the contrast ratio of two colors using an eyedropper tool. It helps optimize content for individuals with vision disabilities.

C.3.2 Documents

Electronic documents, such as Microsoft Office products and Adobe PDF documents, are often incorporated into ADL products. These also need to be Section 508 conformant. Most include built-in accessibility checkers that can assist in the testing process.

[Section508.gov](#) provides authoring and testing guides for:

- [Microsoft Word Documents](#)
- [Adobe Acrobat PDFs](#)
- [Microsoft PowerPoint Presentations](#)
- [Microsoft Excel Spreadsheets](#)

APPENDIX D: Alignment Agreement Example

[Project Name] Alignment Agreement (AA) & Plan of Action and Milestones (POAM)

Executive Summary

Project Overview:

This POAM identifies the scope, schedule, and resources required for the [Project Name] Phase 1 - 3.

The analysis/design will:

- Phase 1: [Define as needed].
- Phase 2: [Define as needed].
- Phase 3: [Define as needed].

The intervention(s)/development will:

- [Add 3-5 short, bulleted statements]
- [bullet]
- [bullet]

Project Plan and Timelines:

The following POAM provides a summary of the major milestones for this project:

- Alignment Phase – Completion date: [Insert date]
- Data Gathering Phase – Estimated completion date: [Insert date]
- Data Design Phase – Estimated completion date: [Insert date]
- Product Delivery Phase 1 – Estimated completion date: [Insert date]
- Product Delivery Phase 2 – Estimated completion date: [Insert date]
- Product Delivery Phase 3 – Estimated completion date: [Insert date]

Purpose

[3-5 sentences of what the project is about. Add graphs/charts as needed in this area if they help to demonstrate the issue and/or proposed solution.]

Project Driver

[Approximately ½-1 page of historical data and details to elaborate on the problem, proposed intervention, and any other relevant details.]

Project Assumptions

The following assumptions exist for this project:

- Assumption 1
- Assumption 2,

- etc., as applicable

Project Scope

Project Objective Statement:

[1-2 sentence brief of the project objective.]

Phase 1 – [Elaborate as needed on Phase 1 bullet from Executive Summary section. Use bullet points as needed.]

Phase 2 – [Elaborate as needed on Phase 2 bullet from Executive Summary section. Use bullet points as needed.]

Phase 3 – [Elaborate as needed on Phase 3 bullet from Executive Summary section. Use bullet points as needed.]

Target Audience:

[2-3 sentences defining target audience.]

Project Phases:

[Chart-based representation of the project phases. Add/delete rows to tailor to your project.

You may include a sentence here to preface/describe the chart below.]

Phase	Deliverable	Success Criteria
Phase 1	[Deliverable]	<ul style="list-style-type: none"> • [Bullet item] • [Bullet item] • [Bullet item]
	Project Schedule	[DDMMYY – DDMMYY]
Phase 2	[Deliverable]	<ul style="list-style-type: none"> • [Bullet item] • [Bullet item] • [Bullet item]
	[Deliverable]	<ul style="list-style-type: none"> • [Bullet item] • [Bullet item] • [Bullet item]
	Project Schedule	[DDMMYY – DDMMYY]
Phase 3	[Deliverable]	<ul style="list-style-type: none"> • [Bullet item] • [Bullet item] • [Bullet item]
	[Deliverable]	<ul style="list-style-type: none"> • [Bullet item] • [Bullet item] • [Bullet item]
	[Deliverable]	<ul style="list-style-type: none"> • [Bullet item] • [Bullet item] • [Bullet item]
	Project Schedule	[DDMMYY – DDMMYY]

Roles and Responsibilities

[Project Title Name] Team responsibilities and stakeholder identification.

Project Roles		
Roles	Name	Position
Client	[Insert Client Name(s)]	[Include Client Position Title(s)]
Stakeholders	Name	[Title/Role]
	Name	[Title/Role]
	Name	[Title/Role]
Project Team	Name	Project Manager
	Name	Project Coordinator
	Name(s)	Phase 1 Team Lead / [Title/Role]
	Name(s)	Phase 1 Team Member / [Title/Role]
	Name(s)	Phase 1 Team Member / [Title/Role]
	Name(s)	Phase 1 Team Member / [Title/Role]
	Name(s)	Phase 2 Team Lead / [Title/Role]
	Name(s)	Phase 2 Team Member / [Title/Role]
	Name(s)	Phase 2 Team Member / [Title/Role]
	Name(s)	Phase 2 Team Member / [Title/Role]
	Name(s)	Phase 2 Team Member / [Title/Role]
	Name(s)	Phase 3 Team Lead / [Title/Role]
	Name(s)	Phase 3 Team Member / [Title/Role]
Name(s)	Phase 3 Team Member / [Title/Role]	
Name(s)	Phase 3 Team Member / [Title/Role]	

Project Constraints

The following table presents how the project is constrained based on three functional areas of project management: Schedule, Scope, and Resources. The explanation for the priority constraint selected in each of the functional project areas are in the table below: [Fill out by placing an "X" as applicable, and below the chart elaborate each bullet]

Area	Priority		
	Most Constrained	Somewhat Constrained	Least Constrained
Schedule			
Scope			
Resources			

- Schedule is [most/somewhat/least] constrained due to the [fill in with 1-2 sentences.]
- Scope is [most/somewhat/least] constrained due to the [fill in with 1-2 sentences.]

- Resources are [most/somewhat/least] constrained due to the [fill in with 1-2 sentences.]

Risk Mitigation and Quality Assurance

Risk Management and Contingency Plan

The following table identifies the potential risks and our contingencies for minimizing risks should any of them become a factor in completing this project.

Risk Factor	Likelihood	Potential Impact	Prevent By	React by
1. [Risk factor, e.g., Communication delays (e.g. deliverable feedback, input, review, etc.) among stakeholders]	[SELECT ONE: Likely, Somewhat Likely, Just as Likely as Unlikely, Somewhat Unlikely, Unlikely]	[SELECT ONE: Insignificant, Medium, Significant]	[If using Communication delays the responses are below, or modify as needed] <ul style="list-style-type: none"> Seek commitment and support at alignment meeting and throughout the project 	[If using Communication delays the responses are below, or modify as needed] <ul style="list-style-type: none"> Communicate with stakeholders Convene realignment meeting/Revise POAM Delay schedule]
2. [Other Risk Factor... delete or add rows if needed]	[SELECT ONE: Likely, Somewhat Likely, Just as Likely as Unlikely, Somewhat Unlikely, Unlikely]	[SELECT ONE: Insignificant, Medium, Significant]	<ul style="list-style-type: none"> [fill as applicable] [fill as applicable] [fill as applicable] 	<ul style="list-style-type: none"> [fill as applicable] [fill as applicable] [fill as applicable]

Quality Assurance:

Deliverable	Quality Assurance Strategy
Phase 1	[1-2 sentences.]
Phase 2	[1-2 sentences.]
Phase 3	[1-2 sentences.]
Final Report	[1-2 sentences.]

Change Management

Change Order Process

Request for changes that impact requirements, scope, resources, etc. must be agreed to by the project sponsor/client and the key stakeholders. Approved changes for this project will be documented in the "Change History" section, which follows the "Project Schedule" section of this POAM.

Any member of the project team can submit a change request. Every change request will be documented. To ensure clarity prior to communicating the change request to the project sponsor and key stakeholders, the change request shall be submitted to Project Manager for review. The request should include the following:

- Date of change
- Description of change
- Expected impact of change
- Rationale for assessed impact of change
- Recommendations to mitigate requested change
- Decision-Makers regarding the change approval
- Agreed upon adaptive action if any

Project Manager and Project Analysts must review change request. Every change request will be stored in the corresponding Teams Tile for audit history. Change requests and the resulting impact to the project will also be documented in the final report.

Version Control Process

The analysis documents are maintained by the Project Analysts in a master shared folder/file structure within Teams. All documents (working, approved, historical, superseded, etc.) will be stored/saved to the master shared folders.

- Appropriate file-naming convention will be used, including date of document.
- When content changes, the original will be saved in a folder labeled “archive” prior to revisions being made to the source/original document.

Communications Governance Strategies

Change Communication Strategy			
Type of Change	Final Decision Maker	Consulted	Comments
Requirements change to include time, people, money, resources	[usually senior client]	[Usually Mr. Pearson and LCDR Lunde/Smith]	[Usually left blank]
Quality of deliverables	[usually Mr. Pearson]	[LCDR Lunde/Smith]	

Project Communications Plan

The Project team will ensure regular communication with the appropriate stakeholder to report on project status, schedule progress and any other issues pertinent to successful project completion per the agreements of this POAM.

Project Communication Strategy			
Stakeholder	Goal	Frequency	Medium
[Senior client name]	Project updates	Monthly [Modify as needed]	Video conference – CG Teams [Modify as needed]

	Changes or other unplanned issues	As needed [Modify as needed]	Email/Phone or video conference [Modify as needed]
[Typically, Mr. Pearson]	Project updates	Weekly [Modify as needed]	Staff mtg. & email [Modify as needed]
	Changes or other unplanned issues	As needed [Modify as needed]	Email/Phone or video conference [Modify as needed]
Phase 1 – 3 Teams	Project updates	Daily Joint-Scrum Thursdays [Modify as needed]	Project Scrum Board [Modify as needed]
	Changes or other unplanned issues	As needed [Modify as needed]	Email/Phone or video conference [Modify as needed]

Project Schedule

The schedule is a dynamic document that evolves with the changes in the project. The schedule document is a provisional project timeline that represents the planned completion or “Target” date for each milestone or deliverable.

The project schedule is organized by the various phases of the analysis. If problems/issues or unforeseen circumstances arise that cause delays, the project schedule will be adjusted accordingly. As changes occur, the reason for these changes will be documented in the “Change History” section of the Project Schedule document.

POAM Change History

The following table will be used to document changes as they occur in this document. In the “Change(s) Made” column be sure to include all of the relevant information from the approved change request document/form, such as, description of change, agreed to action, impact of change, key POC, etc. **Italicized text is solely an example for reference.**

Date	POAM Section Impacted	Change(s) Made
<i>Spring/Summer 2020]</i>	<i>Project Scope – Training Recommendations Roles & Responsibilities Communications Plan Project Schedule</i>	Change: <i>Service impacts from the COVID-19 Global Pandemic. Promulgation of FORCECOM’s Modernized Ready Learning (MRL) strategy by DCMS and new service priorities related to operating in a COVID-19 environment.</i> Action: <i>Emphasis on blended and virtual training solutions that reduce travel and better enable social distancing.</i>

	Impact: Analysis team instructed to provide data and training options related to blended/virtual training solutions.
--	---

[ADL Solution] Maintenance

FC-Teps agrees to perform all required maintenance and updates to the [ADL Solution e.g., EPSS, SpEL] 12 months after delivery, this includes any associated costs or funding. Updates and any required maintenance within the first 12 months will be placed on the FC-Teps worklist on a first come first serve basis as personnel and resources become available.

After 12 months, the [ADL solution] will enter a 3-year lifecycle review. The lifecycle review is the responsibility of the Program [(program name) e.g. CG-444] and should include a review of [ADL solution] content, links, performance for accuracy, and any required updates. Program will work with their assigned Force Readiness Command Training Manager and submit a Request for Development (RFD). After the first 12 months following delivery, Program will be responsible for all associated costs and funding required for any updates or maintenance. T-teps can, but is not required to, initiate a request to Program for review of [ADL solution] information if the three-year program is exceeded.

POAM Signature (Approval) and Date

Title	Signature
Project Lead [Name]	
Project Manager [Name]	
Primary Client [Name]	
FC-T Training Manager [Name]	
FC-Teps Chief [Name]	

APPENDIX E: Design Document Example

Learner Population

This mandated training is required for all newly hired Coast Guard civilian employees.
 This ADL training package can be accessed by any computer with an internet connection including all Coast Guard WSIII computers.
 The majority of users have experienced educational products in the on-line environment and should have no problem with the technology.
 Technical assistance is available via [CGFIXIT](#) (855-243-4948) if needed.

Objectives

Terminal Performance Objectives (TPO)

- 1.0 Given employment in the Coast Guard, IDENTIFY the Coast Guard's history, missions, organization, and personnel, 100% of the time.
- 2.0 Given employment in the Coast Guard, IDENTIFY civilian personnel resources, 100% of the time.
- 3.0 Given employment in the Coast Guard, UTILIZE career development resources, 100% of the time.

Enabling Performance Objectives (EPO)

- 1.1 RECALL basic Coast Guard history
 - 1.2 IDENTIFY Coast Guard missions and core values
 - 1.3 DESCRIBE the basic organization of the Coast Guard
 - 1.4 RECOGNIZE Coast Guard personnel, including ranks and rates

 - 2.1 LOCATE appropriate online resources associated with civilian pay, benefits, and employment
 - 2.2 RECOGNIZE Work-Life resources
 - 2.3 OPERATE Coast Guard directive system
 - 2.4 OPERATE Coast Guard Message System (CGMS)
 - 3.1 RECOGNIZE Coast Guard leadership competencies relevant to the learner's job
 - 3.2 RECOGNIZE the processes used in the Excellence, Achievement, and Recognition System (EARS)
 - 3.3 IDENTIFY available professional development resources
 - 3.4 IDENTIFY available mentoring resources
- *These TPOs and EPOs may change slightly following the approval of the Curriculum Outline

Mapping Objectives

Performance Task	Covert Task	Task Requirements	Objective
Secure electrical breakers prior to opening Box Y.	Recognize consequence of failure to secure electrical breaker.	Requires normal color vision. Also requires qualification as electrician.	Given a model representation of an electrical system, secure the electrical breakers for the system each time before Box Y is opened.

Instructional approach to be used for the course

This course will provide basic NEED TO KNOW information so as to be respectful of the learner's time as well as ensure meaning and relevance. Additional links and resources will be available, but their access will not be a completion requirement.

This ADL product will be activity based. These activities will focus on the learning objectives and will provide the opportunity for the user to navigate and operate CG civilian personnel resources.

This course recognizes that the learner may find themselves in one of the following three situations:

- (1) Someone who is unfamiliar with Coast Guard organizational characteristics and customs;
- (2) Someone who needs access to job-management and communication tools; or
- (3) Someone who needs access to resources that will help them develop their career.

The course will also be packaged as a reference tool and will be hosted at a location yet to be determined.

Assessment Items

Objective	Criticality	Assessment Item	Reference
<i>Given a model representation of an electrical system, secure the electrical breakers for the system each time before Box Y is opened.</i>	<i>High</i>	<i>This is a step in many other system maintenance tasks. High consequence of error requires 100% accuracy. Assessment of this task / step must be accomplished through practice of the task in a larger task context (i.e., a set of maintenance or troubleshooting problems).</i>	<i>COMDTINST X.1</i>

MT Constraints

In accordance with COMDTNOTE 1550, to reduce the training burden on units and individuals, this training will be delivered as e-learning. A printable version will allow an alternative to the on-line experience for those who prefer that medium. However, the user must return to the on-line version to complete the sections and have completion recorded in the learning management system, training management tool, and transmitted to Coast Guard Business Intelligence.

Cost

Insert appropriate cost information in this section to include, but not limited to: 1) Who is responsible for initial funding?, 2) Who is responsible for coordination of future sustainment funding?

Project Plan

Project milestones and review dates were included in the POAM as an attachment to the original alignment agreement.

Acceptance Testing Plan

Following an internal review (Rough Test) and Client review of functional product, a Polished/Finished Test will be conducted to evaluate usability and content of the course. The Polished and Finished tests will consist of the observation of 30 learners as they take online course and reaction survey. The results will be compiled into a final report and used to make improvements in content and usability.

SUBMITTED:

DATE

Ms. XXXXXX, ADL Team Lead

REVIEWED:

DATE

LT XXXXXXXX, ADL Project Officer

APPROVED:

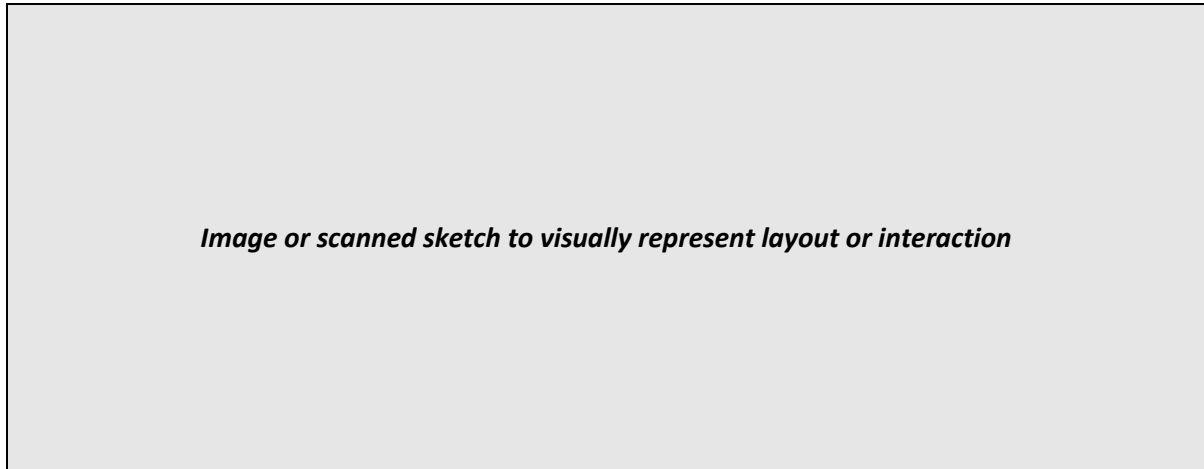
DATE

Ms. XXXXXX, CG-1XX, Client POC

APPENDIX F: Storyboard Example

The format of a storyboard or script can vary by the type of solution. A video script may look significantly different than a screen-based storyboard.

Section	Section Title		
Title	Screen Title	Screen	1-01



On-Screen	Narrative/Audio
Description of screen text, graphical, and interaction elements. [images can be described inline with narrative on the right to indicate presentation sequence] [interactions can also be described using inline action brackets]	Narrative or audio description. For the rough delivery of the storyboards, this may comprise a rolling narrative describing the content, features, and voice of the screen. In polished and final versions this may become the narration script / transcript. Notice that programming instructions have not been included in the SME reviewed boards. Keep the storyboard format simple

Prompt	Activity or navigation instructions
--------	-------------------------------------

APPENDIX G: Instructional System Design (ISD) ADL QA Checklist

Instructional System Design (ISD) ADL QA Checklist

Date:

Course Name:

Course Code:

Testing Criteria:

A. Instructional Design	Validated	Missing	N/A	Notes
1. Design document describes a performance-focused solution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Design flow presents a performance-focused solution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Objectives defined in the design document are measurable in an eLearning environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Objectives establish an appropriate level of challenge for the audience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Media selection focuses on performance activities and not a conveyance of information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. References are included for any job aids or external supports.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Activities are in alignment with objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Design strategy names and identifies specific "world of work" activities for course audience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Design strategy allows for authentic feedback based on requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Remediation was considered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Training includes a pre-test and a post-test comprised of the same question bank, where the pre-test serves as a test out option. (if required)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Pre-test and post-test have the same passing score.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B. Design and Quality of Content	Validated	Missing	N/A	Notes
1. Assessments comply with assessment requirements design in Training System SOPs.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

2. All content is in alignment with instructional objectives and performance requirements.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Content is organized and topics progress in logical order.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Complexity progression aligns with objectives and audience definition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Proper grammar, spelling, and sentence structure is used.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Consistent voice is maintained.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Visuals follow consistent design and are of professional quality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Audio elements (narration, sounds, music, etc.) are consistent with content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Presentation layouts are consistent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Style and themes of course are consistent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Learning objectives are clearly identified.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. All materials included in the design are free of copyright violations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Plain language standards are followed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
C. Functionality and Usability	Validated	Missing	N/A	Notes
1. Screen transitions are distraction free.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Course returns to bookmarked location when resumed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Test scores are accurately recorded in the learner transcript for LMS courses.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Course activities (e.g., knowledge checks) reset if designed to allow additional attempts.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Course conspicuously conveys completion/exit information.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Audio requirements are clearly indicated to the learner.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Audio quality is clear.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Audio elements contain consistent volume levels.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Content is legible throughout the course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Course progress is clearly indicated. (status bar, page number)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. "Help" and/or "feedback" buttons or links are clearly identified as selectable.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. All reference links or buttons are functional.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Any additional links or buttons are functional.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

14. Learner has control (stop, play, rewind) over timeline-based presentations and audio.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
D. Technical Requirements	Validated	Missing	N/A	Notes
1. Packaging meets all technical criteria outlined in SOP.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. SCORM package doesn't exceed 2GB.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Folder and file naming conventions follow established guidelines: Ex: 810000_lesson1_20110415.zip.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Source materials (e.g., story) are saved with the course file(s).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. There is a source asset for each packaged asset.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
E. 508 Conformance	Validated	Missing	N/A	Notes
1. The user can pause, stop, or control the volume of audio content that plays automatically.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Alternate text is provided for all meaningful images.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Background and decorative images are hidden from assistive technology.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Images of text cannot be replaced OR are customizable (e.g., logo).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Text equivalents (captions, transcripts) are provided for <u>video-only</u> and <u>audio-only</u> content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Synchronized text alternatives for multimedia presentations are provided (e.g., closed captioning, text equivalent document).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Synchronized alternatives for video include an equivalent soundtrack (combination of narration and audio descriptions).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. All text alternatives (transcripts, closed captions) are <i>accurate</i> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Users can pause, stop, hide, or control the frequency of moving, blinking, scrolling, or auto-updating content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Users have the opportunity to avoid content that could cause seizures. (flashing content)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. There is a mechanism to resize, scale, or zoom in on text to at least 200% of original size without loss of content or functionality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Labels and instructions are provided for each form input and are sufficiently descriptive.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Instructions do not rely solely on sensory characteristics of components, such as shape, size, visual location, orientation, or sound.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

14. The purpose of each button and link can be determined from link/button text, accessible name/description, and/or programmatically determined context.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. Each input field includes all relevant instructions and cues through a combination of accessible names/descriptions or other programmatic associations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16. Color is not used as the only means of conveying information or prompting a response/action.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17. Visual presentation of text and images of text has sufficient contrast. Per WCAG, 4.5:1 except for 3:1 for large fonts. (18-point text or 14-point bold text)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18. When input errors occur, notification is given, the error is specifically identified, and additional guidance is provided for correction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19. When a timed response is required, the user shall be alerted and given a minimum of 20 seconds to indicate that more time is required.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20. All functionality is operable via a keyboard interface.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21. Individual keystrokes do not require specific timings for activation of functionality.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22. There are no keyboard traps.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
23. Focus order (tab order) sequence preserves the meaning and operability of the web page.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24. Visible indication of focus is provided when focus is on interface component.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25. There are no unexpected changes in content/context when an interface component receives focus, is selected/changed, or is otherwise interacted with.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26. "Skip to main content" navigation option is available.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27. There are two or more ways to locate a page within a course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
28. Course navigation control locations are consistent throughout course.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
29. Descriptive titles are defined for the course and all pages.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
30. Default language is programmatically determined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
31. User controls for captions are provided at the same menu level as the user controls for volume or program selection.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
32. All visual headings are descriptive, programmatically determinable, and logically match the presentation structure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

33. All visually apparent lists are programmatically identified according to their type.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
34. Accessible names and descriptions are consistent for components that perform the same function.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
35. Any data tables have programmatic markup to identify them as tables and include relevant headers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
36. Focus order of content presented in any <u>layout</u> tables makes logical sense and does not include table structure elements (e.g., headers).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Additional Notes

APPENDIX H: Internal ADL QA Checklist

Internal Review (Acceptance Testing) ADL QA Checklist

Date:

Course Name:

Course Code:

Testing Criteria:

A. Content Review	Validated	Missing	N/A	Notes
1. Proper grammar, spelling, and sentence structure is used	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Remediation was considered	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Consistent voice is maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Visuals follow consistent design and are of professional quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Audio quality is clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Audio elements contain consistent volume levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Presentation layouts are consistent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Style and themes of course are consistent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Learning objectives are clearly identified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Plain language standards are followed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Training includes a pre-test and a post-test comprised of the same question bank, where the pre-test serves as a test out option	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Pre-test and post-test have the same passing score	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B. Functionality and Usability	Validated	Missing	N/A	Notes
1. Screen transitions are distraction free	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Course returns to bookmarked location when resumed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3. Course completion records accurately in final course design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Test scores are accurately recorded in the learner transcript for LMS courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Course activities (e.g. knowledge checks) reset if designed to allow additional attempts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Course conspicuously conveys completion/exit information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Audio requirements are clearly indicated to the learner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Audio quality is clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Audio elements contain consistent volume levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Content is legible throughout the course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Course progress is clearly indicated (status bar, page number)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. "Help" and/or "feedback" buttons or links are clearly identified as selectable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. All reference links or buttons are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14. Any additional links or buttons are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. Learner has control (stop, play, rewind) over timeline-based presentations and audio.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16. No fatal errors occur when operating course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
C. Technical Requirements	Validated	Missing	N/A	Notes
1. Packaging meets all technical criteria outlined in SOP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. SCORM package doesn't exceed 2GB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Folder and file naming conventions follow established guidelines: Ex: 810000_lesson1_20110415.zip	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Source materials (e.g. .story) are saved with the course file(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. There is a source asset for each packaged asset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
D. 508 Conformance	Validated	Missing	N/A	Notes
1. The user can pause, stop, or control the volume of audio content that plays automatically.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Alternate text is provided for all meaningful images	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Background and decorative images are hidden from assistive technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Images of text cannot be replaced OR are customizable (e.g. logo)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

5. Text equivalents (captions, transcripts) are provided for <u>video-only</u> and <u>audio-only</u> content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Synchronized text alternatives for multimedia presentations are provided (e.g., closed captioning, text equivalent document)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Synchronized alternatives for video include an equivalent soundtrack (combination of narration and audio descriptions).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. All text alternatives (transcripts, closed captions) are <i>accurate</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Users can pause, stop, hide, or control the frequency of moving, blinking, scrolling, or auto-updating content	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Users have the opportunity to avoid content that could cause seizures (flashing content)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. There is a mechanism to resize, scale, or zoom in on text to at least 200% of original size without loss of content or functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Labels and instructions are provided for each form input and are sufficiently descriptive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. Instructions do not rely solely on sensory characteristics of components, such as shape, size, visual location, orientation, or sound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14. The purpose of each button and link can be determined from link/button text, accessible name/description, and/or programmatically determined context	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. Each input field includes all relevant instructions and cues through a combination of accessible names/descriptions or other programmatic associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16. Color is not used as the only means of conveying information or prompting a response/action	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17. Visual presentation of text and images of text has sufficient contrast. Per WCAG, 4.5:1 except for 3:1 for large fonts (18-point text or 14-point bold text)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
18. When input errors occur, notification is given, the error is specifically identified, and additional guidance is provided for correction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
19. When a timed response is required, the user shall be alerted and given a minimum of 20 seconds to indicate that more time is required	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
20. All functionality is operable via a keyboard interface	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
21. Individual keystrokes do not require specific timings for activation of functionality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
22. There are no keyboard traps	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

23. Focus order (tab order) sequence preserves the meaning and operability of the web page	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
24. Visible indication of focus is provided when focus is on interface component.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
25. There are no unexpected changes in content/context when an interface component receives focus, is selected/changed, or is otherwise interacted with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
26. "Skip to main content" navigation option is available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
27. There are two or more ways to locate a page within a course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
28. Course navigation control locations are consistent throughout course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
29. Descriptive titles are defined for the course and all pages	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
30. Default language is programmatically determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
31. User controls for captions are provided at the same menu level as the user controls for volume or program selection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
32. All visual headings are descriptive, programmatically determinable, and logically match the presentation structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
33. All visually apparent lists are programmatically identified according to their type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
34. Accessible names and descriptions are consistent for components that perform the same function	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
35. Any data tables have programmatic markup to identify them as tables and include relevant headers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
36. Focus order of content presented in any <u>layout</u> tables makes logical sense and does not include table structure elements (e.g. headers).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Additional Notes:

APPENDIX I: FC-Btm ADL QA Checklist

FC-Btm ADL QA Checklist

Date:

Course Name:

Course Code:

Testing Criteria:

A. Functionality and Usability	Validated	Missing	N/A	Notes
1. Screen transitions are distraction free	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. Completed course successfully uploads to LMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Course returns to bookmarked location when resumed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Course completion records accurately in final course design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. Test scores are accurately recorded in the learner transcript for LMS courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
6. Course activities (e.g. knowledge checks) reset if designed to allow additional attempts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7. Course conspicuously conveys completion/exit information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8. Audio requirements are clearly indicated to the learner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9. Audio quality is clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
10. Audio elements contain consistent volume levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
11. Content is legible throughout the course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
12. Course progress is clearly indicated (status bar, page number)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
13. "Help" and/or "feedback" buttons or links are clearly identified as selectable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14. All reference links or buttons are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15. Any additional links or buttons are functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

16. Learner has control (stop, play, rewind) over timeline-based presentations and audio	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
17. No fatal errors occur when operating the course	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
B. Technical Requirements	Validated	Missing	N/A	Notes
1. Packaging meets all technical criteria outlined in SOP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2. SCORM package doesn't exceed 2GB	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3. Folder and file naming conventions follow established guidelines: Ex: 810000_lesson1_20110415.zip	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4. Source materials (e.g. .story) are saved with the course file(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5. There is a source asset for each packaged asset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Additional Notes:

APPENDIX J: ADL Discrepancy Report Template

Use a version of the table below to communicate discrepancies with developers and track their resolution. Tailor the columns and input as needed for the project and use Excel for easy filtering and sorting. See the ADL Discrepancy Report Excel template for an example.

Comment	Location	Issue Type	Media Type	Status
Descriptive Text	Lesson, Module, Topic, Screen	Ex: Bug, Content, Usability, ISD	Ex: Navigation, Text, Animation, Audio	Completed, Pending
1. Audio missing	Lesson 01, Module - Introduction, Screen 4 of 5	Bug	Audio	Completed
2. Too much information on one screen; split into two screens	Lesson 01, Module— Hull and Deck, Screen 17 of 32	Content	Screen and Text	Assigned and pending
3. Make items in text bulleted	Lesson 02, Module – BECCE	Content	Text	Completed
4.				
5.				
6.				
7.				
8.				
9.				
10.				

APPENDIX K: Delivery Agreement Template

ADL Delivery Agreement

Project Title		
Project Duration		
Original Request		
Project Descriptions		
Delivery Format		
Program POC		
Funding		
Maintenance Responsibilities		
Return on Investment		

Date

Name, Project Lead

Date

Name, Branch or Section Chief

Date

Name, Program Representative

Date

Name, Project Champion