



Introduction to the DIT-Transportation Enterprise SDLC (E-SDLC)

Training Audience

The audience for this training is DIT-Transportation personnel who work on projects and smaller work requests:

- **Senior Managers** – individuals in charge of a unit, DIT-T CIO direct reports.
- **Immediate Managers/Supervisors** – individuals responsible for overseeing other employees and operations.
- **Process Owners** – individuals who document and maintain a group's development, maintenance, and delivery methodologies (processes).
- **Project Managers** – individuals that coordinate the delivery of IT solutions. Individuals include coordinators of small work requests that require days or a few weeks to complete as well as individuals that coordinate large work requests that require months to years to complete.
- **IT Team Members** – individuals responsible for providing services in delivering the IT solution, i.e., business analysts, developers, testers, architects, security analysts, database analysts, infrastructure analysts, operations, etc.

Knowing your role in the organization will help you to understand the concepts presented. Please identify your role(s) from the list above.

Training Goal

The goal of this training is to:

- Introduce the DIT-T Enterprise SDLC.
- Meet requirement from the Eagle Audit results in 2019 to define an Enterprise SDLC for DIT Transportation by March 2020 and fully implement by March 2021.

System Development Life Cycle Concepts 101

An **IT solution** can be developed or maintained in-house, procured through a vendor, or a combination of both.

Project managers and team members follow a **Process** that defines a series of actions or steps taken in order to deliver the IT solution.

An **IT Methodology** is the pre-defined process that is specific to how project managers and team members deliver an IT Solution. Examples of IT Methodologies include Waterfall, Spiral, Rapid Application Development (RAD), Agile, Joint Application Development (JAD), and Scrum, etc.

As a result of following an IT methodology, project managers and team members produce outputs or deliverables. **Key deliverables** are the most important deliverables, for example scope of work, requirements, user acceptance, etc.

A **Systems Development Lifecycle (SDLC)** is a series of steps and *key deliverables* that provide a framework for developing and managing the delivery of an *IT solution*. It is not specific to a particular team's *IT methodology*. There is one SDLC and many *IT methodologies*.

Goal and Definition

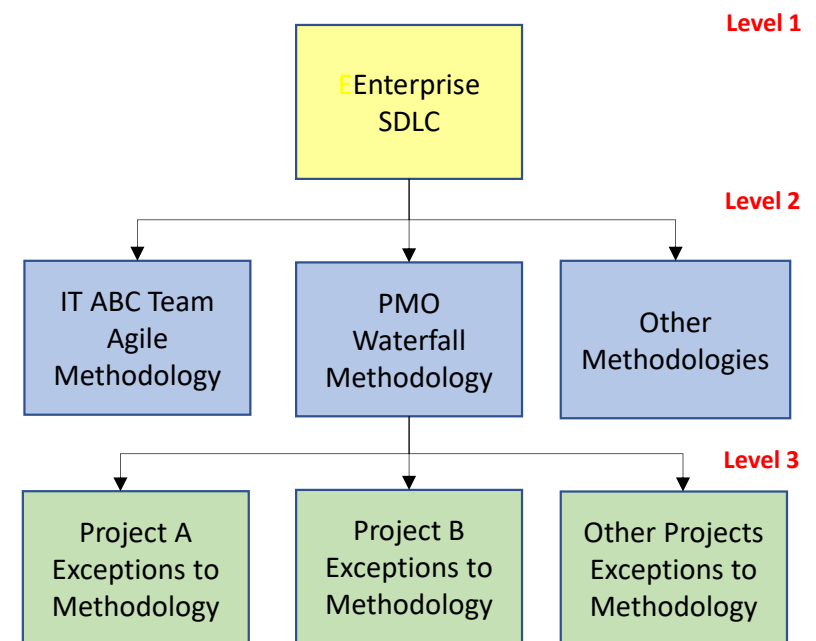
- The goal of the DIT-T Enterprise SDLC is:
 - To define a standard approach to ensure all DIT-T projects meet quality objectives while allowing DIT-T teams maximum flexibility to use the appropriate IT methodology to deliver IT solutions.
- The DIT-T Enterprise SDLC is a deliverable based approach that provides a framework for delivering IT solutions. A deliverables based SDLC is not specific to an IT methodology.
- The SDLC includes:
 - A List of Key Deliverables that may be required in projects and IT methodologies
 - An Enterprise Quality Management Plan

E-SDLC Model

Level 1: DIT-T Enterprise SDLC (E-SDLC)

Level 2: Methodologies inherit E-SDLC in Level 1. Process Owners map their group's delivery methodologies and key deliverables to the E-SDLC. These mapped methodologies contain deliverable names that are familiar to the group that will use the methodology.

Level 3: Project managers and IT team members use the methodologies in Level 2 to deliver IT solutions. If deviations from the methodology are required, project managers and IT team members document exceptions to the methodology.

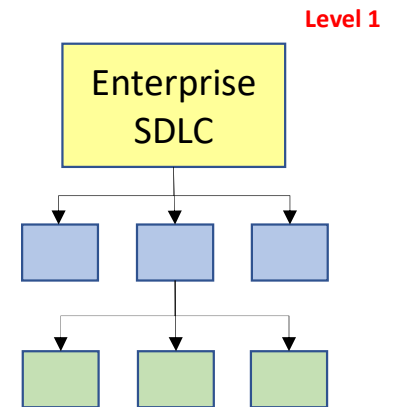


A project's key deliverables can be traced back to the Enterprise SDLC.

Enterprise Quality Management Plan

The Enterprise Quality Management Plan (EQMP) defines the:

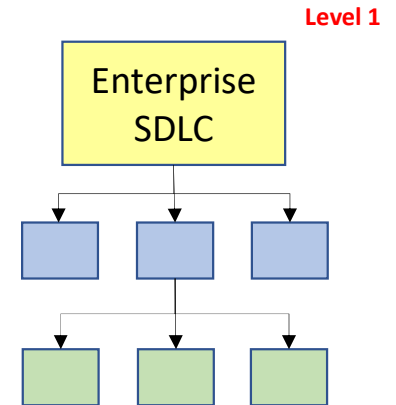
- DIT-T Enterprise SDLC
- Minimum quality requirements and standards for delivery of IT solutions
- Methodology approval process
- Compliance management



Key Deliverables

Key deliverables are categorized by phases:

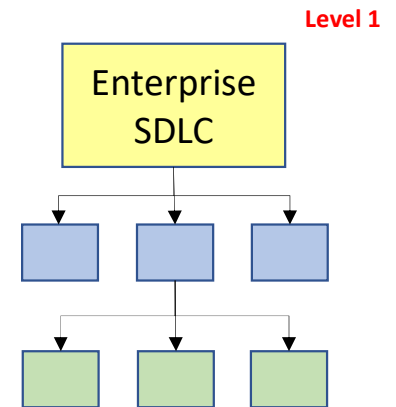
- **Business Concept phase** includes the work request.
- **Initiation phase** includes high level requirements, estimated costs, and estimated dates.
- **Planning and Design phase** includes detail requirements, design, and/or procurement of components.
- **Execution and Build phase** includes coding, configuration, and testing.
- **Implementation phase** includes deployment of the solution.
- **Closeout phase** includes archival of key deliverables.



Phase	ID	Key Deliverables List (Sample)		Req'd for Audit	Audit Control	PMO		Operational	
		Key Deliverable	Minimum Requirement			Enterprise (High Risk)	Lite (Medium Risk)	Non-PMO Project (Medium Risk)	Change Request (Low Risk)
Business Concept	1	Work Request		Y	ITGC03	Y	Y	Y	Y
Business Concept	2	Alternatives Analysis	If required		ITGC03	Y			
Business Concept	3	Preliminary Business Case	Min: Scope of Work, Resource Plan, Cost Plan, Start/End Dates		ITGC03	Y	Y		

Key Deliverables

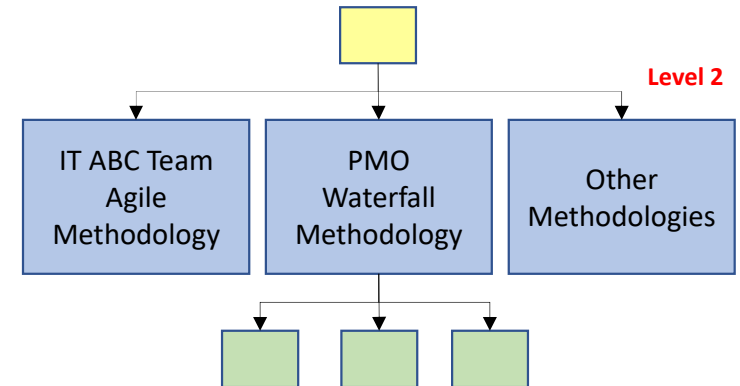
- Key deliverables are categorized by **4 project types**:
 - 2 PMO projects: Enterprise and Lite
 - 2 Operational projects: Non-PMO and Change Request
- There are 17 key deliverables required on all projects. These key deliverables are based on the Eagle audit requirements.
- As project size and risk increase, the number of key deliverables increase; 17 for Operational Change Request, 27 for Operational Non-PMO, 65 for PMO Lite, and 70 for PMO Enterprise.



Risk Level									
		Key Deliverables (Sample)				PMO		Operational	
Phase	ID	Key Deliverable	Minimum Requirement	Req'd for Audit	Audit Control	Enterprise (High Risk)	Lite (Medium Risk)	Non-PMO Project (Medium Risk)	Change Request (Low Risk)
Business Concept	1	Work Request		Y	ITGC03	Y	Y	Y	Y
Business Concept	2	Alternatives Analysis	If required		ITGC03	Y			
Business Concept	3	Preliminary Business Case	Min: Scope of Work, Resource Plan, Cost Plan, Start/End Dates		ITGC03	Y	Y		

IT Methodologies

- Project managers and IT team members use IT methodologies to deliver IT solutions.
- Only approved IT methodologies should be used.
- The left columns (headings shaded in gray) contain information about the E-SDLC key deliverables. The key deliverables are for the project type the IT Methodology is mapped to, in this sample 'PMO Enterprise'. See the **blue arrow** below.
- The columns shaded in blue contain the IT Methodology's key deliverables.



DIT-T Unit: PMO			Methodology Owner/Contact: Cheryl Ritter				Date Methodology Initially Added: 3/16/2020			
Methodology Name: Enterprise Project			Quality Management Plan Used: Enterprise				Date Last Updated: 3/16/2020			
Methodology Type: Waterfall			Deliverable Repository: Project Team Site in Key Documents folder				Comments:			
Key deliverable name in E-SDLC						PMO	Mapping Red Text = Differences from E-SDLC			
			IT Methodology (Sample)			Req'd for Audit	Audit Control	Enterprise (High Risk)	Req'd	Phase
Phase	ID	Key Deliverable	Minimum Requirement							
Business Concept	1	Work Request		Y	ITGC03	Y	Y	Business Concept	Business Project Request	
Business Concept	2	Alternatives Analysis	If required		ITGC03	Y	Y	Business Concept	Alternatives Analysis	
Business Concept	3	Preliminary Business Case	Min: Scope of Work, Resource Plan, Cost Plan, Start/End Dates		ITGC03	Y	Y	Business Concept	Preliminary Business Case	

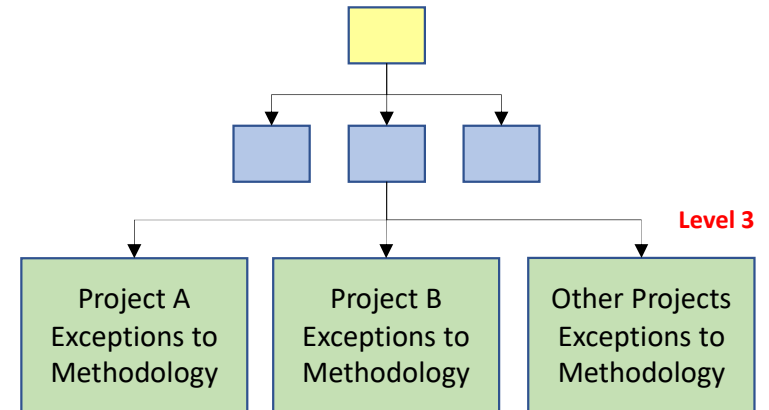
Key deliverable name in E-SDLC

IT Methodology (Sample)

Key deliverable name team is familiar with

Methodology Exceptions

- During project execution, project managers and team members document exceptions to the IT methodology.
 - The exceptions document is required when the project doesn't follow the IT methodology.
 - In the Exception List sample below, exception reason is entered in the column shaded in yellow.
- All exceptions must be approved by the team's senior manager or immediate manager.



DIT-T Unit: PMO		Methodology Owner/Contact: Cheryl Ritter			Date Methodology Initially Added: 03/16/2020			Project Name: IT Service Management (ITSM)		
Methodology Name: Enterprise Project		Quality Management Plan Used: Enterprise			Date Last Updated: 03/16/2020			Project Manager: Viswanathan Krishnan		
Methodology Type: Waterfall		Deliverable Repository: Project site in _Key Project Documentation Folder			Comments:					
		Exception List (Sample)			PMO		Mapping Red Text = Differences from E-SDLC		Exceptions to Methodology	
				Req'd for Audit	Enterprise (High Risk)	Mapping Red Text = Differences from E-SDLC		Exception Reason N/A = Deliverable completed Blank = Deliverable is pending		
Phase	ID	Key Deliverable	Minimum Requirement	Req'd for Audit	Enterprise (High Risk)	Req'd	Phase	Key Deliverable		
Business Concept	1	Work Request		Y	Y	Y	Business Concept	Business Project Request	N/A	
Business Concept	2	Alternatives Analysis	If required		Y	Y	Business Concept	Alternatives Analysis	Not required by EPMO	

Exception Reason:
Key Deliverable is not required by EPMO

IT Teams Create Deliverables

To ensure users can find or search for key deliverables.

- Key deliverables are named using the naming convention established in the team's IT methodology document.
- Key deliverables are stored in a document repository established by each team.

DIT-T Unit: PMO			Methodology Owner/Contact: Cheryl Ritter				Date Methodology Initially Added: 3/16/2020		
Methodology Name: Enterprise Project			Quality Management Plan Used: Enterprise				Date Last Updated: 3/16/2020		
Methodology Type: Waterfall			Deliverable Repository: Project Team Site in Key Documents folder				Comments:		
						PMO		Mapping Red Text = Differences from E-SDLC	
Phase	ID	Key Deliverable	Minimum Requirement	Req'd for Audit	Audit Control	Enterprise (High Risk)	Req'd	Phase	Key Deliverable
Business Concept	1	Work Request		Y	ITGC03	Y	Y	Business Concept	Business Project Request
Business Concept	2	Alternatives Analysis	If required		ITGC03	Y	Y	Business Concept	Alternatives Analysis
Business Concept	3	Preliminary Business Case	Min: Scope of Work, Resource Plan, Cost Plan, Start/End Dates		ITGC03	Y	Y	Business Concept	Preliminary Business Case

Deliverable Repository

Deliverable Name

E-SDLC Site

- The E-SDLC site contains:
 - Announcements
 - E-SDLC – includes Enterprise Quality Management Plan and E-SDLC Deliverables
 - Approved Methodologies
 - Instructions and Templates for documenting a methodology and documenting a methodology exception
 - Training & FAQs
- The E-SDLC site is available on NCDOT Connect.
<https://connect.ncdot.gov/resources/Pages/default.aspx>
- The E-SDLC site is not available on NCDOT Inside.
- To access the site, see below:
 - Go to NCDOT Connect (1), select Resources (2), select Enterprise System Development Life Cycle from right navigation bar (3).
 - **OR** enter 'Enterprise SDLC' in the search box.



OR enter
Search
Criteria

Additional Resources

Project Management

To provide resource information on project management to project managers working on NCDOT transportation projects.

Airport Pavement Management Program

Provides central location to store and display pavement related data and inspection results.

Aviation Division Resources Site

Resources for Unmanned Aircraft Systems.


Enterprise System Development Life Cycle (SDLC)

Enterprise System Development Life Cycle (SDLC)

E-SDLC Site Demo

Click on the picture to start the video.

Home > Connect NCDOT > Resources > Enterprise System Development Life Cycle (SDLC)





NORTH CAROLINA DEPARTMENT OF
INFORMATION TECHNOLOGY
Transportation

Enterprise SDLC

○ Business Concept ○ Initiation ○ Planning & Design ○ Execution & Build ○ Implementation ○ Closeout

E-SDLC Q&A on March 30th 12:00 to 1:00

[SDLC](#) [Approved Methodologies](#) [Document a Methodology](#) [Document Methodology Exceptions](#) [Training](#) [FAQ](#)

Was this page helpful?  

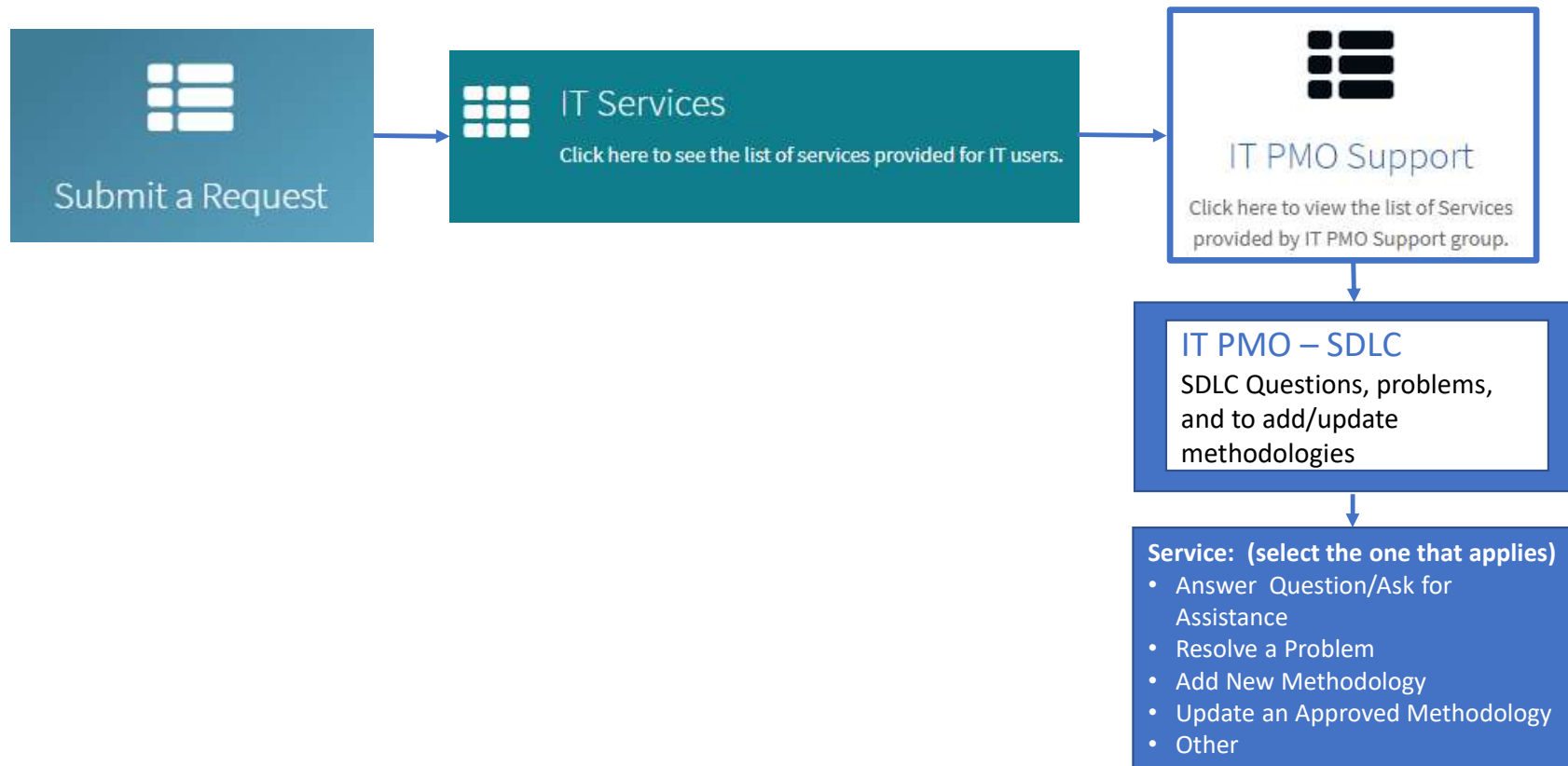
Compliance Management

- DIT-T senior management is responsible for managing compliance within their area of responsibility.
- All exceptions require DIT-T senior manager's or immediate manager's approval. Exceptions include:
 - IT methodology is missing required key deliverables for the project type it is mapped to.
 - Projects that follow an unapproved IT Methodology.
 - Enterprise Quality Management Plan is not followed.
 - Required Key deliverables not produced during project execution.
 - Deliverable naming convention not followed.
 - Deliverables not saved in the document repository.

DIT-T Management & Auditors Expectations

- All DIT-T employees and contractors that work on projects or smaller work efforts are expected to:
 - Understand the DIT-T Enterprise SDLC.
 - Know how to find the DIT-T Enterprise SDLC documentation.
 - Follow approved IT Methodologies in the delivery of IT solutions.
 - Be able to provide the key deliverables and evidence of IT methodology execution for internal & external audits.

Request Assistance through ServiceNow



Next Steps

Once you have completed this course:

- You should contact your immediate manager for directions on how the Enterprise SDLC is implemented within your team. Directions should include at a minimum:
 - IT Methodologies you will use to complete work.
 - The location of the Key Deliverable repository.
- You should use the copy of this presentation along with other more detail documents on the DIT-T Enterprise SDLC site to help you start using the E-SDLC on projects. The E-SDLC site is available at <https://connect.ncdot.gov/resources/SDLC/Pages/default.aspx>
- You are invited to attend an E-SDLC Q&A session on March 30th 12:00 to 1:00 PM. This meeting is to provide a venue for individuals to ask questions and discuss usage of the E-SDLC. The meeting is optional. Please check the E-SDLC site closer to the date for possible changes to the date and time.



Congratulations You Finished
the E-SDLC Training!