



System Development and Life-Cycle Management (SDLCM) Methodology

Subject Process Models	Type	Standard
	Identifier	S-3161
	Effective Date	February 2002
	Revision No.	2

Approval

CISCO Program Director

A. PURPOSE

This standard defines the format and content of process models.

B. APPLICABILITY

This standard applies to all Projects/Tasks subject to the SDLCM Methodology that include software development or integration.

Members of the Development Team, designated by the Technical Project Manager, are responsible for developing and maintaining the Project process models, key managers and quality assurance personnel for reviewing them, and the Technical and Business Project Managers for approving them. The process models are made available to all members of the Project team, preferably in electronic form.

C. REFERENCE PUBLICATIONS

The following publications contain related information:

- *SDLCM Methodology Handbook*, Component 1
- *SDLCM Methodology Handbook*, Component 3
- *Systems Development CASE Tool Guidelines*, Systems Development and Integration Branch (SDIB) Office of Information Resources Management (OIRM), September 12, 1995
- *Standards and Conventions*, SDIB OIRM, August 28, 1995
- SDLCM Methodology Procedure P-3111, Process Modeling
- SDLCM Methodology Standard S-3163, Data Flow Diagrams
- SDLCM Methodology Standard S-3162, Context Diagrams
- SDLCM Methodology Standard S-3051, System Requirements Specification
- SDLCM Methodology Standard S-3053, System Operations Concept

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- SDLCM Methodology Standard S-3171, Logical Design Document
- SDLCM Methodology Standard S-3172, Physical Design Document

D. STANDARD

Two levels of Process Models may be produced by a Project following the SDLCM Methodology:

- The **Conceptual Process Model**, also known as the scope-setting version of the logical process model, is called a context diagram. This process model is documented in the System Requirements Specification (SRS).
- The **Logical Process Model**, completed version, provides all the detail required to effectively document and communicate to the business community the Project team's understanding of the functional requirements of the application. The logical process model includes data flow diagrams (DFDs) and process definitions. This process model is documented in Logical Design Document

Refer to the Section 3.3, Process Model, of the *Systems Development CASE Tool Guidelines* and to SDLCM Methodology Procedure P-3111, Process Modeling, for descriptions the processes used to create and refine process models.

D.1 Conceptual Process Model, the Context Diagram

The context diagram gives a visual representation of the functional scope of the Project. Include the context diagram in the SRS and in the Logical Design Document.

Refer to SDLCM Methodology Standard S-3162, Context Diagrams, for the format and content of this process model.

D.2 Logical Process Model

Create an initial logical process model that effectively documents and communicates to the business community the Project team's understanding of the functional requirements of the application. Include all of the processes required to fully depict the business problem being solved; do not differentiate between processes that are automated or manual and those that may be converted from manual to automated.

Refine the logical process model throughout the design process. Refer to SDLCM Procedure P-3111, Process Modeling, or Section 3.3, Process Model, of the *Systems Development CASE Tool Guidelines* for guidance in refining the logical process model.

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Include the logical process model in the Logical Design Document.

D.2.1 DATA FLOW DIAGRAMS

Provide DFDs to show how processes use data and to decompose the context diagram to the lowest meaningful level that reflects the structure of the application.

In the first level DFD, indicate the major components or subsystems of the proposed solution to the business problem. Include both automated and manual processes and do not differentiate between them.

Refer to SDLCM Methodology Standard S-3163, Data Flow Diagrams, for the format and content of DFDs.

D.2.2 PROCESS DEFINITION

List and define each process object identified in the DFDs. Process objects include process (or function) names, data flows, data stores, and external agents (data sources and sinks).

Refer to Section 3.2, Process Objects, of the *Standards and Conventions* document for the conventions used to define each type of process object.