



Commandant
United States Coast Guard

2100 Second Street, S.W.
Washington, DC 20593-0001
Staff Symbol: CG-6
Phone: (202) 267-2767
Fax: (202) 267-2598

COMDTINST 5230.66
OCT 26 2004

COMMANDANT INSTRUCTION 5230.66

Subj: COMMAND, CONTROL, COMMUNICATIONS, COMPUTERS AND INFORMATION TECHNOLOGY (C4&IT) SYSTEMS DEVELOPMENT LIFE CYCLE (SDLC) POLICY

Ref: (a) Establishment of the CG-6 Directorate and Associated Duties, COMDTINST 5401.5 (series)

1. PURPOSE: This Instruction establishes the authority, roles, and responsibilities governing the Coast Guard’s System Development Life Cycle (SDLC) for Command, Control, Communications, Computers, and Information Technology (C4&IT) systems. The SDLC provides a consistent process for C4&IT project management, including definition of the phases and the designated decision points. This policy governs all C4&IT systems development and management by Commandant (CG-6), Sponsors, System Development Agents (SDAs), and System Support Agents (SSAs). It applies to all C4&IT assets, including systems and products that enable C4&IT capability in support of the Coast Guard’s missions or business functions. All Coast Guard organizations involved in the planning, acquisition, production, deployment, support, operation, and disposition of C4&IT systems shall employ the SDLC Policy and adhere to the roles defined herein.
2. ACTION. Area and District commanders, commanders of maintenance and logistics commands, commanding officers of Headquarters units, assistant commandants for directorates, Chief Counsel, and special staff offices at Headquarters shall ensure that all Coast Guard and contractor support personnel or organizations involved in the acquisition, development, operations, maintenance, or use of Coast Guard C4&IT systems comply with the provisions of this Instruction. Internet release is authorized.
3. DIRECTIVES AFFECTED. None.

DISTRIBUTION – SDL No. 141

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
A	1	1	1	1	1	1																				
B		8	10		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
C	1	1	1	1	1	1	1				2	1	1	2			1								1	
D	1	1		1	1															1						
E															1								1			
F																										
G																										
H																										

NON-STANDARD DISTRIBUTION:

4. SYSTEMS DEVELOPMENT LIFE CYCLE. The SDLC is a sequence of seven phases used to produce, operate, and support C4&IT systems. These phases begin with the identification of need and span all facets of a C4&IT system's life cycle, including planning, acquisition, deployment, operation, and retirement of a system. The SDLC Practice is based on industry and government best practices and shall be kept current through updates to the SDLC Practices. SDLC Practices shall be promulgated separately and shall identify inputs, outputs, procedures, and products for each phase. The Coast Guard's SDLC is defined by the following seven phases:
 - a. Conceptual Planning. This phase is the first step of any system's life cycle. It is during this phase that a need to acquire or significantly enhance a system is identified, its feasibility and costs are assessed, and the risks and various project planning approaches are defined.
 - b. Planning and Requirements Definition. This phase begins after the project has been defined and appropriate resources have been committed. The first portion of this phase involves collecting, defining, and validating functional, support, and training requirements. The second part involves developing initial life cycle management plans, including project planning, project management, configuration management, support, operations, and training management.
 - c. Design. During this phase, functional, support, and training requirements are translated into preliminary and detailed designs. Decisions are made to address how the system will meet functional requirements. A preliminary (general) system design, emphasizing the functional features of the system, is produced as a high-level guide. Then a final (detailed) system design is produced that expands the design by specifying all the technical detail needed to develop the system.
 - d. Development and Testing. During this phase, systems are developed or acquired based on detailed design specifications. The system is validated through a sequence of unit, integration, performance, system, and acceptance testing. The objective is to ensure that the system functions as expected and that the Sponsor's requirements are satisfied. All system components, communications, applications, procedures, and associated documentation are developed/acquired, tested, and integrated. This phase requires strong user participation in order to verify thorough testing of all requirements and to meet all business needs.
 - e. Implementation. During this phase, the new or enhanced system is installed in the production environment, users are trained, data is converted (as needed), the system is turned over to the Sponsor, and business processes are evaluated. This phase includes efforts required to implement/resolve system problems identified during the implementation process and to plan for sustainment.
 - f. Operations and Maintenance. The system becomes operational during this phase. The emphasis during this phase is to ensure that the Sponsor's needs continue to be met and that the system continues to perform according to specifications. Routine hardware and software maintenance and upgrades are performed to ensure effective system operations. User training continues during this phase, as needed, to acquaint new users with the system or to introduce new features to current users. Additional user support is provided, as an ongoing activity, to help resolve reported problems.
 - g. Disposition (or System Retirement). This phase represents the end of the system's life cycle. It provides for the deliberate termination of a system to ensure that vital information is preserved for potential future access and/or reactivation. The system, when placed in the Disposition Phase, has been declared surplus and/or obsolete and has been scheduled for shutdown. The

emphasis of this phase is to ensure that the system (e.g., equipment, parts, software, data, procedures, documentation) is properly packaged and disposed.

5. **SDLC ROLES AND RESPONSIBILITIES.** The Commandant (CG-6) organization works proactively with all entities involved in the system life cycle. Figure 1: CG-6 Roles and Relationships Framework, as outlined in reference (a), illustrates the key roles involved and their relationships. The remainder of this section describes the roles, relationships, and responsibilities as it relates to this policy.

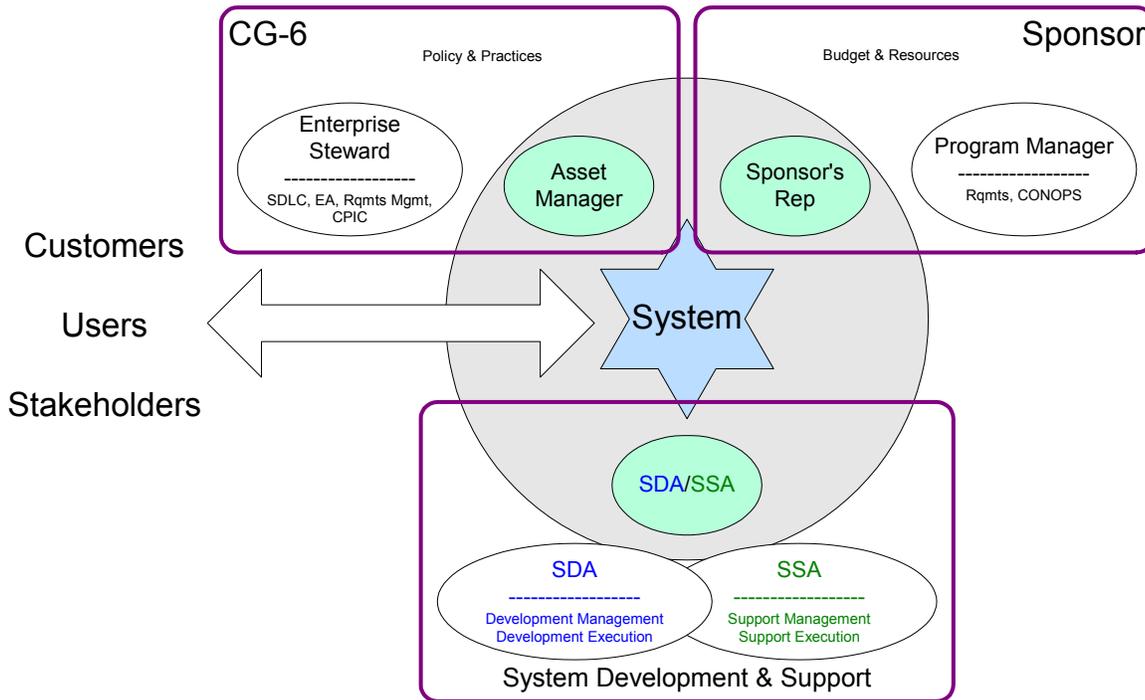


Figure 1: CG-6 Roles and Relationships Framework

- a. **CG-6.** The Chief Information Officer (CIO). The CIO is responsible for implementing the SDLC for C4&IT systems Coast Guard-wide. Specifically, CG-6 has the following responsibilities:
- (1) Maintaining and approving SDLC policy and practice. To this end, CG-6 shall establish an SDLC policy review board, consisting of representatives from various stakeholder groups, to develop and maintain the SDLC.
 - (2) Designating SDLC roles, in writing, to specific Coast Guard or other organizations, or individuals, as necessary, to ensure organizational alignment and accountability for each initiative.
 - (3) Delegating the execution of SDLC policies and practices to the roles defined herein.
- b. **Enterprise Steward.** CG-6 provides enterprise-level stewardship of the policies and practices associated with the SDLC. The Enterprise Steward monitors the health, effectiveness, and efficiency of the SDLC and ensures organizational compliance. The Enterprise Steward shall sponsor, develop, promulgate, and maintain SDLC policies and ensure the implementation of associated practices for CG-6. The Enterprise Steward has the following responsibilities:

- (1) Proactively communicating, educating, and training the entire C4&IT community to execute SDLC policies and practices properly and to successfully develop, deploy, and support C4&IT systems.
 - (2) Providing the appropriate tools and authority to ensure communication and compliance with SDLC policies and practices.
- c. Asset Manager. The Asset Manager is designated by CG-6 to guide, oversee, and monitor execution of SDLC for the assigned system. An asset is a system, product (e.g., Commercial-off-the-Shelf equipment, information, policy), data, service, capability, or resource that is available, managed, delivered, applied, supported or sustained on an enterprise scale by the CG-6 organization in collaboration with its supporting program Sponsor and manager, customers, and external stakeholders, SDA, and SSA. The Asset Manager shall collaborate with the Sponsor's Representative, the SDA, and the SSA to ensure alignment and compliance with the SDLC policies and practices. Asset Manager responsibilities include:
- (1) Ensuring that performance and life cycle management measures are developed, tracked, and evaluated.
 - (2) Developing, reviewing, evaluating, and improving overall SDLC policies and practices.
 - (3) Coordinating, collaborating, and communicating with the Sponsor's Representative, SDA, SSA, and CG-6 to ensure that funding and resource estimates are realistic and adequate, have considered all phases of the SDLC, and deliver the requested C4&IT system.
 - (4) Managing assigned assets throughout the SDLC and coordinating with other CG-6 and Program Manager offices to ensure that the project or initiative delivers the requested C4&IT system.
 - (5) Ensuring that the C4&IT system is fully supported upon deployment (including alignment), documented, and in compliance with all appropriate C4&IT policies and practices and other appropriate Coast Guard policies and practices.
 - (6) Staying familiar with mission and business systems' practices and concepts of operation.
- d. Sponsor. The organizational element that validates requirements and accepts capability needed to support Coast Guard mission or business performance. The Sponsor has the following responsibilities:
- (1) Defining, maintaining, and articulating organizational and program goals and validating requirements developed by the Program Manager.
 - (2) Acquiring, through planning and programming, the necessary resources to fully implement and support the needed C4&IT capability, considering total operating costs and the entire life cycle of the system. This is accomplished by collaborating through the Sponsor's Representative with the CG-6 Asset Manager.
 - (3) Coordinating with CG-6 for identification and assignment of an Asset Manager for every conceptual and existing C4&IT systems
- e. Program Manager. The Program Manager is the Sponsor's designated manager, responsible for providing requirements and end user advocacy. The Program Manager has the following responsibilities:
- (1) Defining, maintaining, evaluating, and articulating program and system requirements.

- (2) Coordinating, assimilating, and providing end user input to the appropriate phase of the SDLC.
 - (3) Identifying and facilitating the resolution of issues tied to requirements, needs, and technology capabilities.
 - (4) Defining, tracking, and evaluating performance measures.
 - (5) Developing, updating, and establishing program doctrine, policies, and associated concepts of operations, including operational or end user training requirements.
 - (6) Fulfilling the planning, programming, and budgeting functions of the Sponsor's organization.
 - (7) Developing acceptance criteria (including performance) for C4&IT systems.
- f. Sponsor's Representative. The Sponsor's Representative is the Sponsor and Program Manager's liaison with the CG-6 Asset Manager, the SDA, and the SSA for delivery of a system. Along with the Asset Manager, SDA, and SSA, the Sponsor's Representative is part of a team responsible for working together, and with customers, users, and stakeholders, to deliver successful, supportable, and easy-to-use C4&IT systems. Responsibilities include:
- (1) Coordinating concept approval for development of any new or existing system with CG-6 and the Sponsor.
 - (2) Articulating requirements for the Program Manager, Sponsor, users, customers, and stakeholders.
 - (3) Working with CG-6 to ensure that any new or existing system aligns with the Enterprise Architecture.
 - (4) Developing cost estimates in collaboration with the CG-6 Asset Manager, who shall collect and assimilate appropriate SDA and SSA input.
 - (5) Communicating and resolving issues identified with system development, operation, or support with the SDA, SSA, Sponsor, and Program Manager.
 - (6) Staying abreast of changes in technology as they may pertain to meeting mission requirements, enabling the Sponsor's Representative to work closely with, and understand the impact of, technologies recommended by the SDA, SSA, and Asset Manager.
 - (7) Communicating with end users to gather input and feedback and to relay results.
- g. System Development Agent (SDA). The individual, unit, firm, agency, or organization that performs, or has the responsibility for, following the SDLC for design, development, implementation, and support of C4&IT systems, as well as the acquisition of C4&IT products or services. Along with the Asset Manager, Sponsor's Representative, and SSA, the SDA is part of a team responsible for working together, and with customers, users, and stakeholders, to deliver successful, supportable, and easy-to-use C4&IT systems. Responsibilities include:
- (1) Planning, acquiring, designing, developing, and deploying C4&IT systems and services when designated by CG-6.
 - (2) Coordinating and communicating with the CG-6 Asset Manager, the Sponsor's Representative, and the SSA during all appropriate stages within the SDLC to ensure that all requirements, issues, and items are properly addressed.

- (3) Evaluating the effectiveness of C4&IT SDLC development policies and practices, and working with CG-6 to improve SDLC policies and practices.
 - (4) Together with the SSA, ensuring that C4&IT systems are built to improve mission performance and sustain availability with the lowest total ownership cost, taking into account the supportability requirements and costs associated with sustaining enterprise systems.
 - (5) Defining, tracking, and evaluating system development measures throughout the life cycle.
- h. System Support Agent (SSA). The individual, unit, firm, agency, or organization that has responsibility for maintenance, support, and availability of a system. Along with the Asset Manager, Sponsor's Representative, and SDA, the SSA is part of a team responsible for working together, and with customers, users, and stakeholders, to deliver successful, supportable, and easy-to-use C4&IT systems. Responsibilities include:
- (1) Maintaining and supporting C4&IT systems and services as they are used in the field and within Coast Guard programs.
 - (2) Coordinating and communicating with the CG-6 Asset Manager, the Sponsor's Representative, and the SDA, during all appropriate stages within the SDLC, to ensure that all support requirements, issues, and items are properly addressed.
 - (3) Evaluating the effectiveness of C4&IT SDLC support policies and practices, and working with CG-6 to improve SDLC policies and practices.
 - (4) Together with the SDA, ensuring that C4&IT systems are built to improve mission performance and sustain availability with the lowest total ownership cost, taking into account the supportability requirements and costs associated with sustaining enterprise systems.
 - (5) Defining, tracking, and evaluating support measures throughout the life cycle.
- i. User. The individual, unit, or organization that interacts with and uses C4&IT systems and services to accomplish work, execute missions, or deliver products and services to Coast Guard members and external customers. The user provides feedback on C4&IT systems and services, suggests enhancements to existing C4&IT systems, and identifies new system requirements via the Sponsor's Representative.
- j. Customer. Any person or organization that benefits from the C4&IT system or service. An internal customer is a person or organization inside the Coast Guard for which the C4&IT system or service is being provided. An external customer is a person or organization outside the Coast Guard for which the C4&IT product or service is being provided. The customer provides feedback on C4&IT systems and services, suggests enhancements to existing C4&IT systems and services, or identifies new system or service requirements via the Sponsor's Representative.
- k. Stakeholder. Any person, group, or organization (e.g., customers; employees; suppliers; owners; Office of Management and Budget, Department of Homeland Security, or other agencies; and Congress) that can place a claim on, or influence, a C4&IT system, is affected by that system, or has a vested interest in, or expectation for, the system. The stakeholder provides feedback on C4&IT systems, suggests enhancements to existing C4&IT systems, and identifies new system or service requirements via the Sponsor's Representative.
6. IMPLEMENTATION: The SDLC practice establishes the actions necessary to ensure compliance with enterprise policy relating to systems development and management. All Coast Guard

organizations involved in the planning, acquisition, production, deployment, support, operation, and disposition of C4&IT systems shall follow the SDLC practice. CG-6 charters and delegates the primary development, maintenance, and review responsibility for SDLC practices to the SDLC Policy Review Board. CG-6 has final approval authority for the SDLC practice. The SDLC practice is promulgated separately. It is reviewed and updated to improve the overall SDLC process and to maintain responsiveness to changes in mission priorities, business practices, and technology.

7. ENVIRONMENTAL ASPECT AND IMPACT CONSIDERATIONS: Environmental considerations were examined in the development of this Instruction and have been determined not to be applicable.
8. FORMS/REPORTS: None.

R.T. HEWITT /s/
Assistant Commandant for Command, Control,
Communications, Computers and
Information Technology (Acting)