
HUD Software Acquisition Policy

1-1 Introduction and Background

The U.S. Department of Housing and Urban Development (HUD) will implement a software acquisition capability maturity model to improve efficiency and cost effectiveness in software acquisition projects. This policy directs HUD to attain a software acquisition level of performance based upon recognized standards in industry and government.

1-2 Applicability

This policy applies to HUD software acquisition projects which have a performance start date on or after the effective date of this policy. Projects that are in process before the effective date of this policy will be required to demonstrate due diligence in complying with this policy. Because of its unique corporate status and statutory mission, Ginnie Mae will execute its software acquisition policy pursuant to its corporate charter. Any exceptions to this policy must be approved, on a case-by-case basis, by the HUD Assistant Secretary for Administration/Chief Information Officer (ASA/CIO), the HUD Chief Technology Officer (CTO), and the HUD Chief Procurement Officer (CPO). Any Project Leader desiring such an exception must provide, in written detail, any reasons for the request. The request must be approved in writing by the Government Technical Monitor (GTM) and the Government Technical Representative (GTR) before presentation to the ASA/CIO, the CTO, and the CPO for approval.

1-3 Overview

The HUD Software Acquisition Policy has been designed to support the Software Engineering Institute Software Acquisition – Capability Maturity Model (SEI SA-CMM) Level 2 Key Process Areas (KPs), commonly referred to as the ‘Repeatable’ level. All software acquisition projects at HUD will demonstrate capabilities in accordance with SEI SA-CMM Level 2. HUD’s objective to achieve SEI SA-CMM Level 2 is to stabilize both the software contract management and project management processes, allowing project teams to repeat successful practices employed on earlier projects.

HUD understands that the SEI SA-CMM is based upon an ongoing improvement in processes within an organization, and anticipates constant movement towards higher SEI SA-CMM maturity levels.

Areas of SEI SA-CMM persuasion include:

- A. The SEI SA-CMM will define a scale for measuring process maturity, thus allowing HUD to accurately compare its process capability to that of other organizations.
- B. The SEI SA-CMM will build an understanding of the software acquisition process at HUD by describing the practices that contribute to Level 2 maturity.
- C. The SEI SA-CMM KPs will provide HUD with a consistent basis for conducting appraisals of software processes.
- D. The SEI SA-CMM KPs will serve as a blueprint for software process improvement, helping HUD focus on the areas it must address in order to continually improve in their software acquisitions processes

The SEI presents their maturity model (for all levels) through a framework that lists seven (7) specific areas. These areas are defined by the SEI as:

Key Process Areas – A cluster of related activities in an area of software acquisition that, when performed collectively, achieve a set of goals considered important for establishing process capability in that area. The key process areas have been defined to reside at a single maturity level. These are the principal building blocks to help determine the software acquisition process capability of an organization and understand the improvements needed to advance to higher maturity levels.

Goals – The aggregate result achieved by the effective implementation of the common features of a key process area. The goals signify the scope and intent of each key process area.

Commitment to Perform – Describes the actions that the organization must take to establish the process and ensure that it can endure. Commitment to perform typically involves organizational policies and senior management sponsorship.

Ability to Perform – The preconditions that must exist in the project or organization to implement the software process competently and completely. Ability to perform typically involves resources, organizational structures, and training.

Activities Performed – A description of the roles and procedures necessary to implement a key process area. Activities performed typically involve establishing plans and procedures, performing the work, tracking work efforts, and taking corrective actions as necessary.

Measurement and Analysis – A description of the need to measure the process performance and analyze these measurements. Measurement and analysis typically includes examples of the measurements that could be taken to determine the status and effectiveness of the activities performed.

Verifying Implementation – The steps to ensure that the activities are performed in compliance with the process that has been established. Verifying implementation typically encompasses reviews by management.

All of the processes represented within the SEI SA-CMM Level 2 are incorporated and addressed in this *HUD Software Acquisition Capability Maturity Model Policy Handbook*. The procedures and KPAs from the SEI SA-CMM Level 2 represent a standard set of procedures.

The HUD software acquisition procedures and plans will be tailored by individual project teams, based on the SEI SA-CMM Level 2 KPAs. Project teams may include end users, the software acquisition team, project leader, project system engineering, project evaluation, project quality assurance, software support organization, project configuration data management of that project, and all other affected groups.

1-4 HUD Organizational Level Policy

KPA sub-policies are building blocks for HUD to focus its efforts to improve its software acquisition process, and they identify the issues that will be addressed to comply with the

HUD Software Acquisition Policy. The seven (7) KPA sub-policies within the *HUD Software Acquisition Capability Maturity Model Policy Handbook* directly correspond with the seven (7) KPAs in the SEI SA-CMM Level 2.

HUD software acquisition projects will be consistent with the HUD Software Acquisition Policy, and all KPA sub-policies will employ these basic software management practices, which ensure that:

- HUD project commitments (schedule, cost, scope, resources) will be based upon the results observed on previous projects and on the requirements of the current project;
- A group responsible for each KPA sub-policy exists, and will be staffed with individuals that either have experience or will receive training;
- HUD has a written sub-policy for each of the KPAs;
- The HUD Project Leader for a project will be responsible for change control, and will track software costs, schedules, and functionality;
- Problems in meeting HUD commitments (schedule, cost, scope, resources) will be identified when they arise;
- HUD software requirements and the work products developed to satisfy them will be baselined, and their integrity will be controlled;
- Adequate resources will be provided for each of the KPA sub-policies;
- Project standards will be defined, and the project manager will ensure they will be faithfully followed;
- The HUD project team will work with its contractors to establish a strong customer-supplier relationship;
- HUD project team and contractor team performance will be tracked and measured;
- The HUD products and services will be measured, to determine the status of the various sub-policy activities and resultant products;
- Software transition to the HUD-designated support organization will be planned, measured, and reported;
- Projects will execute the HUD Software Acquisition Planning sub-policy in accordance with the current HUD System Development Methodology;
- Where applicable, the Independent Verification & Validation (IV&V) process will ensure complete independence and unbiased assessment of policy compliance;
- The HUD project team will perform its activities in accordance with its documented plans, and both the activities and the plan will be reviewed and formally approved by the HUD GTR on both a periodic and event-driven basis, and HUD Project Leader on both a periodic and an event-driven basis; and,
- The software acquisition requirements for any given software acquisition project (utilizing all KPAs) will be developed, documented, reviewed, and formally approved jointly by the users, software acquisition team, project manager, project system

- engineering, project evaluation, project quality assurance, software support organization, project configuration data management of that project, and all other affected groups, as well as the individual or group responsible for compliance with the relevant Software Acquisition procedure or KPA Policy. All the above will receive orientation on the acquisition's objectives and procedures.

1-5 HUD Software Acquisition Policy

The following seven (7) sub-policies reside within the HUD Software Acquisition Policy. Each of these sub-policies addresses a cluster of related activities that, when performed collectively, achieve a set of goals considered important for enhancing process capability.

In addition to the requirements of the HUD Organizational Level Policy (section 1-4), which apply to all seven (7) KPA sub-policies, each of these seven (7) sub-policies also have individual requirements that are unique to that specific KPA sub-policy. They are detailed in the accompanying sections. The seven (7) KPA sub-policies are:

- Software Acquisition Planning
- Solicitation
- Requirements Development & Management
- Project Management
- Contract Tracking & Oversight
- Evaluation
- Transition to Support

The following sections of this *HUD Software Acquisition Capability Maturity Model Policy Handbook* identify each of the seven (7) sub-policies.