

Organization of the CMM

The *CMM* developed by the Software Engineering Institute (SEI) has been explained in great detail in different publications. Some of you have probably already read about it, gone through CMM training, or been Trained on how to conduct a software capability evaluation (SCE).

CMM is a conceptual framework that represents process management of software development. CMM contains five maturity levels or stages I 11.

1. *Level 1, initial:* The software process is characterized as ad hoc, chaotic, and heroic. Few processes are defined or followed, and project success depends on individual effort. There is no formal management control over software development.
2. *Level 2, repeatable:* This level provides an introduction to the formal, documented process. Basic management processes are established to control cost, scheduling, and functionality. The necessary process discipline is in place to repeat previous successes on projects with similar applications. Elevation from Level I to Level 2 means that the organization has established project management control, established a software engineering process group (SEPG), and formally introduced software engineering methods and techniques.
3. *Level 3, defined:* This level provides a foundation for continuous process improvement by establishing the necessary process management functions to control process **parameters**. The software process for both management and engineering activities is documented, standardized, and integrated into a standard software process for the organization. All projects use a tailored version of the organization's standard software process for developing and maintaining software.
4. *Level 4, managed:* Detailed measures of the software process and product quality are collected. Both the software process and products are quantitatively understood and controlled.
5. *Level 5, optimized:* Continuous process improvement is enabled by quantitative feedback from the process and from piloting innovative ideas and technologies.

These five maturity levels define an original scale for measuring the maturity of an organization's software process and for evaluating its software process capability (Figure 2. 1). Each maturity level indicates the level of process capability.

Levels 2 through 5 are decompose() into 18 key process areas (KPAs) as shown in Figure 2.2. Each KPA is organized into five sections, called common, feat features.

1. *Commitment to perform:* Describes the actions that must take place within the organization to ensure that the process is established and will function. The commitment to perform feature usually involves developing organizational policies and senior management sponsorship.