

C1.3 CASE STuDY

**Case Study Of “Chapter 7. United Space Alliance, LLC”**



**NAME：XUANMING LIU**

**ID：3180106071**

**SUBMIT DATE：2020.12.10**

#### How does this company promote CMMI within the organization?

* **Background**

In 2001, United Space Alliance (henceforth referred to as USA) began investigating the use of CMMI within the company. In order to determine the feasibility of using CMMI, USA conducted a partial pilot of CMMI within the company.

* **Flow**

1. The first critical step to adopt CMMI is the involvement of management. Among the first to be involved was USA senior management, including the USA Software Process owner and the Flight Software Program Element Associate Program Manager. In addition, the NASA Technical Management Representative was involved in discussions and decisions regarding this effort.
2. Each year, executive managers establish goals to support the organization's vision and mission. Process owners establish the company-level goals for their disciplines. The owner of each company goal must define the goal, collect requirements, and track comments for that goal. Managers then use these higher-level goals to develop supporting goals and initiatives for their areas. The Vision Support Plan goal-deployment process requires a standard metric for measuring the progress of each goal/objective/initiative and each related year-end metric target. This same process of refining higher level goals to supporting goals continues until each employee's goals are defined.
3. Involving these key players enabled USA to establish goals and expectations, determine the scope of the effort, communicate plans, establish sponsorship, and obtain commitment of resources. To ensure the success of the CMMI case study, it was managed as a project. Schedules were established and planning was conducted to obtain commitments, resources, tools, personnel, and training.
4. A detailed project plan was created. Such a plan is important for successful execution of such projects, and is especially critical for early identification of risks. Internal meetings were held to select projects, to identify and assign project members to tasks, and to determine the appropriate scope of support required for the case study. Relevant stakeholders participated in the development and review of the plan.

#### How does this company use CMMI as the evaluation system to evaluate the organization's own competence level or maturity level?

In 2001, USA began investigating the use of CMMI within the company. To determine the feasibility of using CMMI, USA piloted CMMI in part of the company through an informal assessment of specific projects following SEI's IDEAL guidelines for instituting process improvement. The IDEAL model is an organizational improvement model that serves as a road map for initiating, planning, and implementing improvement actions. During the CMMI case study, the initiating and diagnosing phases of the IDEAL model were launched.

Each year, executive managers establish goals to support the organization's vision and mission. Process owners establish the company-level goals for their disciplines. The owner of each company goal must define the goal, collect requirements, and track comments for that goal.

Managers then use these higher-level goals to develop supporting goals and initiatives for their areas. The Vision Support Plan goal-deployment process requires a standard metric for measuring the progress of each goal/objective/initiative and each related year-end metric target. This same process of refining higher level goals to supporting goals continues until each employee's goals are defined.

Each owner of a goal/objective/initiative must monitor the status of progress using stoplight colors (red, yellow, and green).

* Green: Performance met the target or is projected to meet the target.
* Yellow: Performance is projected to miss the target, but a corrective action plan is in place.
* Red: Performance did not meet the target or is projected to not meet the target.

If the status is yellow or red, a plan of action must be available for review and attention is given to the goal/objective/initiative.

In addition to entering information into the Vision Support Plan Web-based system, managers display information on bulletin boards known as Vision Support Plan wall boards. Each department maintains a Vision Support Plan wall board that displays its progress toward its goals and stimulates discussion of related work. Progress toward USA goals is reviewed periodically by management at all levels of the company. Once a quarter, the senior management team formally reviews progress by reviewing the wall boards with all members of the department.

#### If you come to set CMMI implementation guidelines for this business, how would you develop it with maturity level 2?

1. At maturity level 2, the projects of the organization have ensured that requirements are managed and that processes are planned, performed, measured, and controlled. The process discipline reflected by maturity level 2 helps to ensure that existing practices are retained during times of stress. When these practices are in place, projects are performed and managed according to their documented plans. At the same time, the status of the work products and the delivery of services are visible to management at defined points (e.g., at major milestones and at the completion of major tasks). Commitments are established among relevant stakeholders and are revised as needed. Work products are appropriately controlled. The work products and services satisfy their specified process descriptions, standards, and procedures.
2. Establish a maturity level 1 process group to bootstrap the maturity level 1 organization to maturity level 2. Maturity level 1 process improvement activities may depend primarily on the insight and competence of the process group staff until an infrastructure to support more disciplined and widespread improvement is in place.
3. To establish a maturity level 2 process, the company should improve ideological understanding, understand the necessity and urgency first. Then determine a reasonable goal and in order to develop and improve the software process, CMM training and consulting work, the establishment of a working group.

At the CMMI Level 2 maturity level, the institutionalization of the process is achieved through the following work.

1. follow the organization's guidelines.
2. The implementation of documented plans and process descriptions.
3. Use adequate and adequate resources (including funds, personnel and tools).
4. Maintain proper responsibility and authority for distribution.
5. Train personnel who implement and support the process.
6. The appropriate product configuration management.
7. Monitor and control the performance of the process and take appropriate corrective actions.
8. To objectively review the process, its work products and services, to deal with non-compliance issues.
9. The activities, status and results of the process are reviewed by the appropriate management and appropriate corrective actions taken.
10. Identify and cooperate with relevant stakeholders.

#### If you come to set CMMI implementation rules for this enterprise, how would you develop it with capability level 2?

**Personnel**

There is a need to categorize personnel by technical ability and work direction, and to update management policies for key technical and managerial personnel to maximize members' abilities.

Defined key personnel are planned to participate in the project, and project supervision of key personnel is performed during the project.

**Resources**

Resource allocation, delineation of the range of resources we use through evaluation, and definition and estimation of the range of products at our disposal.

**Process**

Objectively assess the implemented process, associated work products and services, and the degree of compliance with applicable process descriptions, standards and procedures.

Promptly update and maintain documentation related to the implementation process to ensure that there is evidence to support it at the time, and conduct a policy analysis to determine the scope and process of the implementation and the constraints of the project development process in accordance with the previously specified scope and process.

**Control**

Establish specific spans of control, standardize the scope of management and responsibilities between different management levels, and ensure that specific spans are in place for proper operation in stressful environments.

Establish and maintain estimates of project planning parameters.

Estimate the project scope, define the project life cycle, and establish the scope of the planning effort accordingly.

Determine workload and cost estimates and, based on the rationale for the estimates, estimate the amount and cost of ad hoc work required for work products and work items.

**Commitment Monitoring**

Establish and maintain commitment to the project plan and review all plans affecting the project to understand project commitments.

Adjust the project plan to reflect available and estimated resources and obtain commitments from key personnel responsible for implementing and supporting the plan.

Specify a standard oversight process, which may be extended as appropriate, to ensure the fairness, integrity, and efficiency of the project.