Dryden Flight Research Center

Spotlight

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CCPM Moving Through Preliminary Phases **12.21.10**

Weeks into the transition to a new a project management initiative and, soon, a new software tool, things are going well, Dryden managers reported at a town hall meeting Dec. 2. When the new system is fully implemented, it is expected to increase Dryden's efficiency by as much as 30 percent.

David McBride

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Center Director David McBride led the update and Dryden individuals working on phasing in the Critical Chain Project Management initiative sat on a panel to answer questions. Panel members were Dave Wright, director of flight operations; Dennis Hines, associate director of programs; Brad Flick, director of research and engineering; and Joel Sitz, who heads up the CCPM implementation team.

CCPM is a methodology and management structure designed to reach milestones on schedule and efficiently allocate resources. Projects will be synchronized and integrated into a single database to minimize constraints. With this concept, resources are made available to accelerate a project to its completion. CCPM is based on the Theory of Constraints, the concept that a system can work safely and with as much momentum as allowed by its most constrained component - machine, aircraft or staff.

Active projects chosen as starting points for the new initiative are under way, while others are scheduled during the next year. A number of additional projects and significant work will be added to the schedule as the process moves toward full implementation in the first quarter of 2011. The way the new initiative works, resources are focused on projects that are under way to allow them to be completed on time and, preferably, sooner. All known milestones are expected to be complete on time, although some might have delayed starting dates as they come up on the schedule, McBride said.

Once a project is complete, different projects become the focus of resources until they too are complete. In the meantime, other projects are "frozen." In other words, resources required to prepare frozen projects for becoming active ones are allocated, but nothing more until the project comes up on the schedule. Once a project is completed, assets are moved from that project to a new one scheduled to begin.

So far, the CCPM implementation team and center managers are responding to challenges as the process moves forward. Aside from judging if customer needs are met and if projects are finished on schedule, there are other issues that will be closely monitored. The CCPM initiative is intended to reduce employee stress because multitasking will be reduced, and extra time from early completion of projects is intended to be for creating opportunities for research, training and planning.

It is planned that an average of two project milestones will be achieved each week. To do that, daily and weekly meetings are set to review progress - and address challenges - to make sure projects are moving forward, Sitz explained. The careful monitoring also will identify constraints that might apply to more than one project.

Daily meetings will focus on rapidly identifying and resolving challenges that come up, ensuring adequate resources and resolving items from the weekly meetings. Three weekly meetings look at resource allocation, the full package needed to prepare a project, or "full kit," and the Center Work Review meeting. Resource allocation ensures that adequate resources are given to active projects and that projects about to become active are properly staffed. Full kit meetings help synchronize the center on work a project is preparing to begin and will soon be active. Center Work Review meetings review measurements of work progress and approve release of projects to active status. Also, challenges that could not be resolved at lower levels are discussed.

A "frozen," or full kit in progress, project must have everything together and lined up before it can be considered for addition to the active project list, Sitz explained. That is a process called full kitting. Once it is fully approved it is added to the pipeline of projects called a work queue until it comes up on the schedule.

A next step includes moving the integrated schedules to the Concerto database application, which works with Dryden's current project management software. The new software tool will be used to provide synchronized information on how projects are performing by looking at a single database used by resource managers, project managers and center management. Also of importance, the software helps identify where there are overlapping schedule conflicts and offers alternatives, Sitz said. Once the Concerto application is fully functional, he said many of the meetings required during the start of the CCPM process will no longer be needed.

The new initiative and software also will enable a shift in Dryden culture, McBride said. Instead of working on a number of projects at the same time, the new approach will be to apply more resources to a single project, complete it and move on to the next project.

In the past, there were a number of overlapping projects and it was a practice that if something wasn't needed right away, it would not be the top priority. The downside to that is there was no buffer if things went wrong later on. This new initiative makes it easier to reach milestones and identify problems that could impede progress.

"The mission changes from year to year, but it is up to us to help manage it," McBride said. "When we make a commitment, we need to understand what needs to be done."

"The tool will allow us to make better decisions with respect to both short- and long-term project planning," Wright said.

The initiative also is expected to give managers insight into questions such as percentage of projects completed on time, cost estimates versus actual dollars spent, the capacity to take on new work and potential constraints in meeting customer schedules, Hines said.

"Buffers" will be added to projects that will be planned in segments so progress can be monitored. Buffers are time increments added to a project's anticipated completion date to account for issues that crop up. That includes variables such as when employees are on vacation, in training or otherwise unavailable, McBride said.

The idea is for half of the buffer to have been used by the time the project is half done, meaning that the project is on schedule and able to meet unexpected items. Re-planning and contacting the customer may be necessary if the project is too far into its buffer zone. How the work is to be accomplished remains the task of the project team.

Project planning was identified during the January 2010 Safety Day as the number one area that needed work to improve the balance between work and home lives. That was the genesis of the CCPM approach.

In the past, a key project or two has monopolized center resources, which has required a shifting of priorities. Along those lines, a recent NASA audit determined that some employees are working on as many as 10 projects in a single week.

The new initiative is aimed at reducing some of those employee stresses associated with multi-tasking. It is anticipated that most center employees will not see major changes in their day-to-day work, while the center's workforce will benefit from the initiative, McBride said.

By Jay Levine
X-Press Editor

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