

Rubin Observatory

Milestones

DM Leadership Team Meeting | Virtual | September 15/17, 2020



Joint Director's Review, July 2020

“The team should consider streamlining their milestone delivery and acceptance procedures. This will probably require the project to adopt a more automated system to manage milestones.”

Specific Issues

- **The systems we have for tracking milestones are unclear:**
 - Information is spread across multiple locations.
 - The mechanism for reporting completion of a milestone is not well documented.
 - Automation is impossible, because the “source of truth” is Primavera, which has no useful API, and to which most of us don't have access.
- **The milestones themselves are poorly defined or understood:**
 - Several T/CAMs have expressed uncertainty about what their milestones actually commit them to.
 - We've historically regarded it as a lot of effort to simply generate lists of milestones; at the end of that process, everybody has been so exhausted that capturing details about what the milestones *really mean* has slipped through the cracks.

Milestone Levels

- **Level 1**

- The most prominent trackers of progress. They are reported directly to the agencies, and publicly e.g. at <https://www.lsst.org/about/project-status>. They represent major project events: first light, start of operations, etc. There are no L1 milestones inside the DM subsystem.

- **Level 2**

- Milestones at the subsystem level. In DM, these primarily represent major integration events. Most are described in LDM-503 (and hence receive designations *LDM-503-*nnn**); some others represent purely time-based milestones (start or end of a development cycle, etc). These milestones are all in the 1.02C.00 WBS (i.e., they are owned by Wil directly).

- **Level 3**

- Deliverables at the third level of WBS (1.02C.03, 1.02C.04, 1.02C.05, etc) — that is, the result of work by a particular team. These typically represent some new functionality or service becoming available to the wider subsystem or project. These are owned by the T/CAM responsible for the corresponding WBS element.

- **Level 4**

- These milestones fall below the third level of WBS (i.e., they are defined by a team for the internal use of that team). They are not generally externally tracked. They are owned by the T/CAM responsible for the corresponding WBS element.

Milestone Dates

- Milestones have a due (“baseline”) date, and either an estimated or an achieved delivery date.
- The baseline date describes the official project schedule.
 - *It is the baseline date that we report against.*
 - If the milestone is delivered after the baseline date, then it is **late**.
 - The baseline can be updated by means of a change request (work with Kevin Long).
- Estimated delivery dates are based on performance to date, and are the project controls system's best guess at what the true delivery date of the milestone will be.
 - We don't report against these estimates; they are just estimates.

Completion Criteria

- For level 2 milestones, we have an elaborate test procedure, as described in LDM-503.
 - This involves working through the Jira LVV process, developing a test plan and report, and having it properly approved by DM leadership.
- For level 3 milestones, we are much less formal: the milestone is complete when its owner asserts that it is complete.
 - We don't normally audit or check this; we're happy that the DM team will claim milestones appropriately.
 - However, you should be aware that reviewers and others may wish to see evidence of the milestones we've claimed: when marking a milestone as complete, it's wise to (at least) have a narrative justifying why you regard it as done, and (better) have relevant artefacts demonstrating its completion.

Milestone Ownership

- *It is the responsibility of T/CAMs to "own" their milestones.*
 - That means, you should understand:
 - What milestones are due, and if they are likely to be late.
 - What it *means* to complete the milestone.
- That last part is critical, and difficult: many of our milestones have been handed down from previous generations of management, and may not be well described, or may be obsolete, or may simply be wrong.
 - **Nobody will fix this except you!**
 - You can remove, edit, reword, reschedule, add new predecessors, etc, by means of change requests; again, Kevin can help with this (and it's not hard).
 - When a milestone becomes due, **you must be able to account for it;** being confused about what it means after it has become due is not ok!

DMTN-158: Milestone Summary

- [DMTN-158](#) is my attempt to summarize all the information we have about milestones in a way that is accessible to everybody.
- It includes milestone IDs, titles, levels, descriptions (where available), test specifications (where available), due dates, etc.
- It also shows (diagrammatically) the relationship between milestones (so you can see what your milestones depend on, and what depends on your milestones).
- Late milestones are highlighted for quick reference.
- The aim is that this should be an easy way to see exactly what it is you are committed to, and to identify any information which is missing.

Data Sources: Primavera

- Primavera/P6/PMCS (it has three names, because why not?) is the **baselined source of truth** regarding:
 - Milestone IDs (“LDM-503-11b”, “DM-DAX-17”, etc);
 - Milestone names (short summary text; “LSSTCam Ops Readiness”, etc);
 - Milestone WBS (who is responsible);
 - Milestone dates (due, and estimate/actual completion);
 - Predecessor and successor milestones.
- This information **can only be changed with an LCR**. Work with Kevin Long as necessary.
- Primavera is updated monthly (i.e. there will be one set of milestone data which is valid for August 2020, another for September 2020, etc).
- Primavera has no useful API, so we can't access or reformat this information directly. Therefore...

Data Sources: Isst-dm/milestones

- The [Isst-dm/milestones](#) repository contains:
 - Periodically updated “snapshots” of the contents of Primavera (one per month) in a programmatically accessible form.
 - Additional annotations for each milestone, including:
 - An extended description of what the milestone actually is;
 - Comments;
 - References to accompanying test specification documents (generally only applicable to L2 milestones);
 - References to Jira tickets describing milestone completion, test plan writing, etc (ditto).
- Annotations are stored in a YAML file in the repo. They are **not baselined**, and you can update them by simply committing a new version of that file.

Other Documents

- LDM-503 (the DM test plan, describing all our L2 milestones) and LDM-564 (describing which L3 milestones are associated with each L2 milestone) are also based on the contents of the Isst-dm/milestones repository.



Updates

- Pushing any update to [lsst-dm/milestones](#)'s master branch will automatically trigger PRs on [lsst/ldm-503](#), [lsst/ldm-564](#), [lsst-dm/dmtn-158](#) to update them to the latest milestone information.
 - Note that somebody will still need to go and merge those PRs (I considered doing that automatically, but it seems risky).
- The procedure for extracting information from Primavera and using it to update lsst-dm/milestones is described in that repository's README.rst.
- I expect — and Wil can confirm — that he and/or Michelle Poland will take responsibility for pushing a monthly update to the latest data from Primavera.

Reporting

- Our primary mechanism for reporting on milestone status is our monthly report.
- Every month, Michelle P. will seed the template report with a list of the milestones that are due (based on DMTN-158).
 - Note that occasionally Primavera receives its monthly update after we are required to generate the monthly report, so this list may not always reflect the latest changes (hi Tim!).
- T/CAMs will update the report to:
 - Describe any milestones which have been completed
 - (This can include milestones which aren't yet due, but have been completed early; don't limit yourself to Michelle's list).
 - Provide a narrative describing why any late milestones are delayed and what is being done about it.

Reporting (2)

- After the report has been produced, Wil and/or Michelle will communicate any milestones which have been completed to Kevin Long, who will update their status in Primavera.
- Typically this is done through <https://confluence.lsstcorp.org/display/DM/DM+PMCS+Update+Requests>
- But an e-mail to Kevin to make sure never hurts!

Conclusions

- DMTN-158 makes it easy to see what milestones are defined and who is responsible for them.
- If you are responsible, you *must* take ownership... but can then redefine or reschedule as appropriate.
- Procedures for updating and reporting on milestone status aren't automatic, but they should be minimally-arduous!

