

The Evolution of Schedule Margin

(what to expect when the revised IPMR DID is released)

Yancy Qualls

yancy.qualls@humphreys-assoc.com

August 26, 2015

Schedule Margin (Was and Is)

Schedule Margin was...

...a method for accommodating contingencies.

(like a car bumper)



Does not necessarily attempt to predict the amount of future schedule risk/slippage, but instead simply provides a limited cushion when contingencies arise

Schedule Margin is...

...is a technique used for insight and management of schedule risks.



(like GPS)

Attempts to quantify the amount of future schedule risk/slippage, so that a true representation of the path forward is communicated

Schedule Margin (Was and Is)

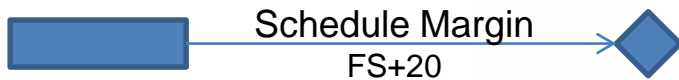
Schedule Margin was...

...represented by:

- a task



- a lag



- space



Schedule Margin is...

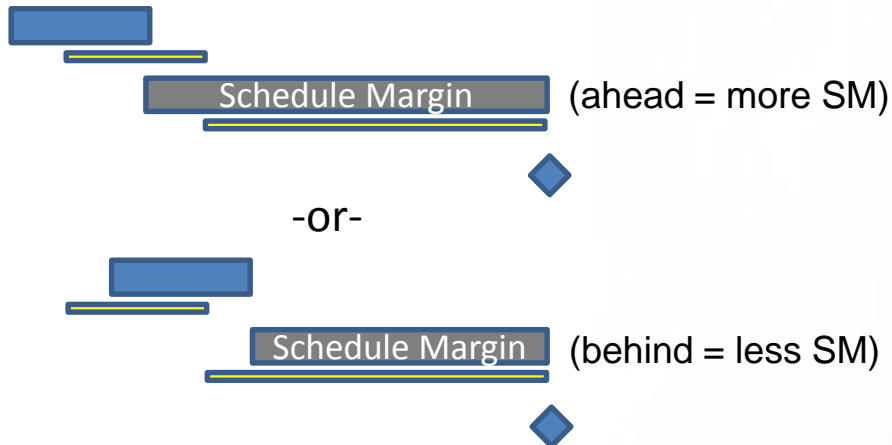
...represented by:

- a task

Schedule Margin (Was and Is)

Schedule Margin was...

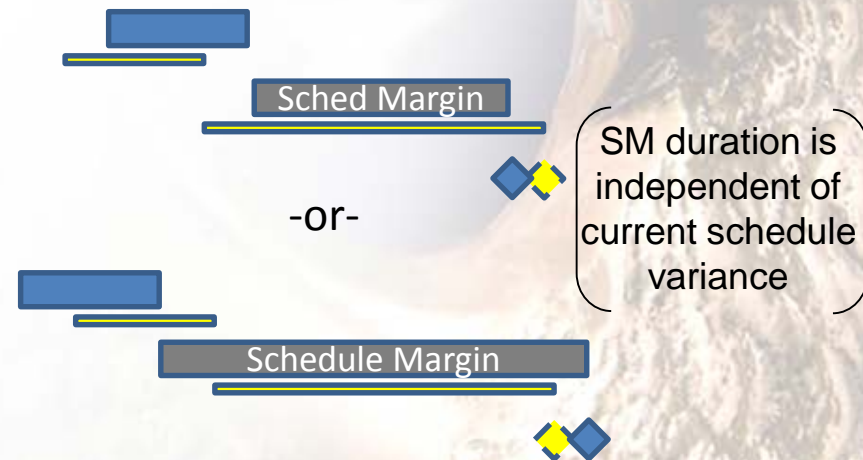
... the difference between contractual milestone date(s) and the contractor's planned date(s) of accomplishment.



Not an assessment of schedule risk, but simply any left over time.

Schedule Margin is...

...representative of the estimated schedule risk/uncertainty to the subsequent event/activity.

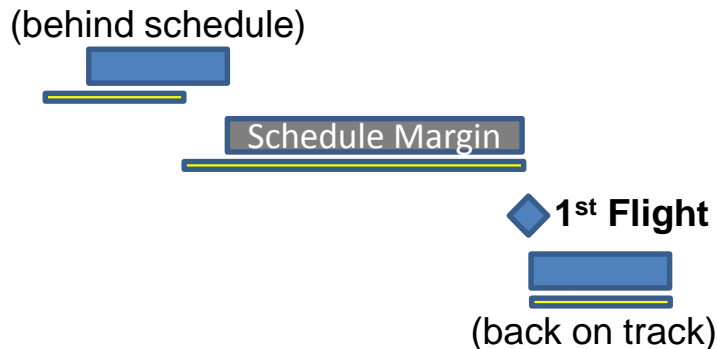


Represents estimated risk to the schedule, regardless of the current condition being ahead or behind.

Schedule Margin (Was and Is)

Schedule Margin was...

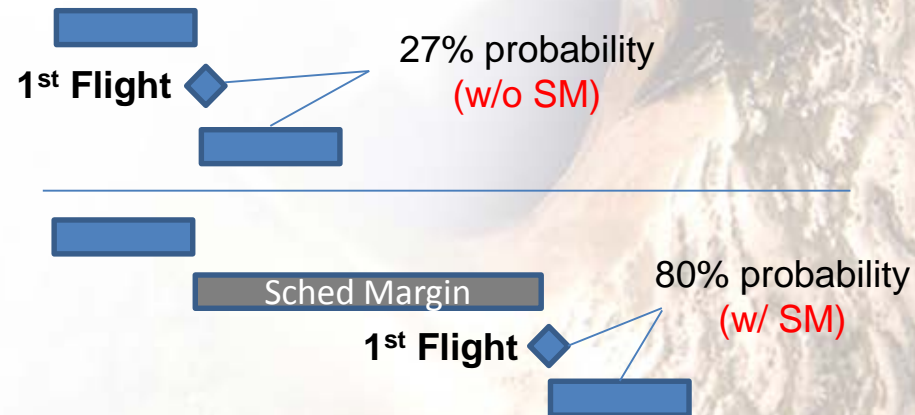
... essentially a way to constrain an event (and all downstream effort).



Primary purpose was to hold an event in place while affording some buffer for slippage. Not to provide the most likely forecast of downstream effort.

Schedule Margin is...

...representative of the estimated schedule risk/uncertainty to the subsequent event/activity.

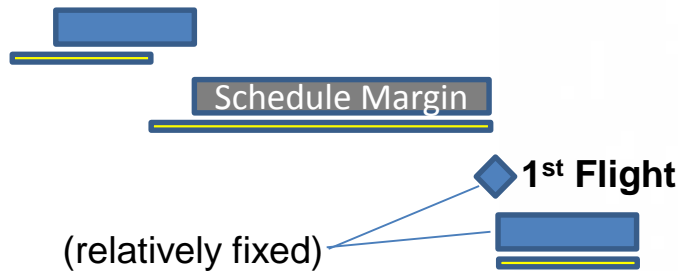


Primary purpose is to more accurately forecast the performance of downstream effort (*regardless of baseline plan*)

Schedule Margin (Was and Is)

Schedule Margin was...

...**not** necessarily representative of the way the work was intended to be performed.

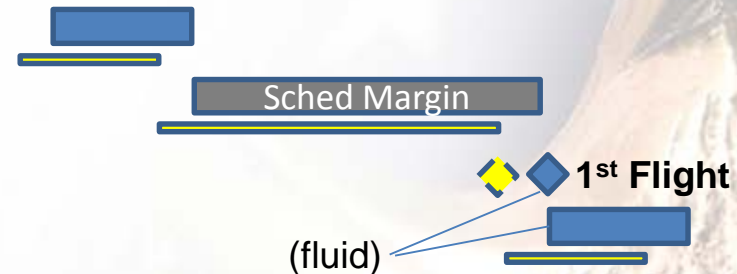


But instead consumed total float and “constrained” the subsequent event.

A significant factor in DCMA/NAVAIR not allowing SM to be linked to discrete predecessors

Schedule Margin is...

...intended to more accurately represent the timing of future tasks.

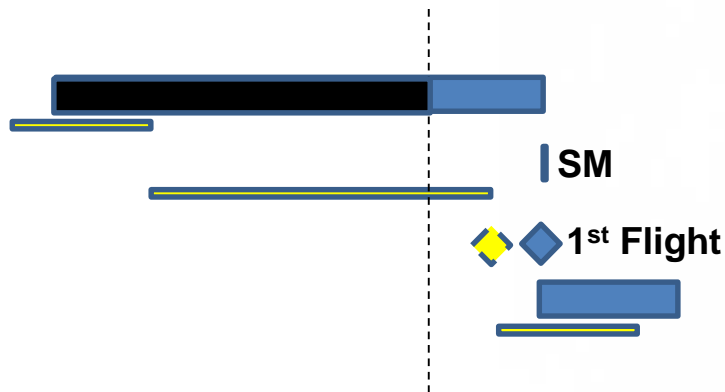


SM represents a true estimate of future schedule risk/slippage to the event, making the forecast to the event and all downstream effort more realistic

Schedule Margin (Was and Is)

Schedule Margin was...

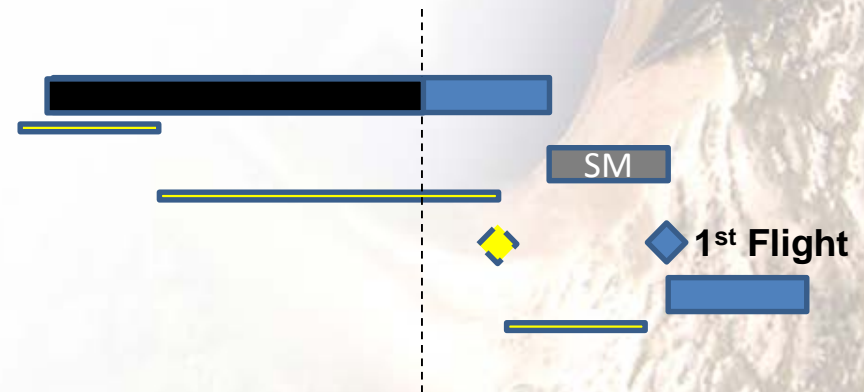
...zero duration when the effort pushed past the planned event date.



Schedule Margin tasks are obsolete once the event is forecasted to be missed.

Schedule Margin is...

...always represents the estimated risk/slippage to the event (regardless of performance to plan).



Schedule Margin tasks are always viable management tools, improving the accuracy of downstream forecasts.

Schedule Margin (Was and Is)

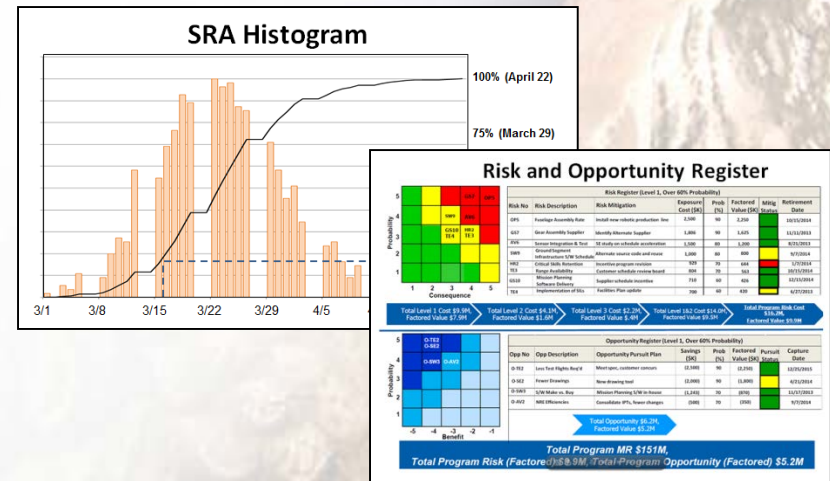
Schedule Margin was...

...left over space, not systemically assessed or traceable to any other management tools



Schedule Margin is...

...a formal estimate of schedule risk, derived through a standard process (such as an SRA), and traceable to the project's risk management plan



Schedule Margin (Was and Is)

Schedule Margin was...

- not resource loaded
- baselined
- owned by the Program Manager
- only placed before the as the last task/activity/gap before a significant event
- discussed in Format 5

Schedule Margin is...

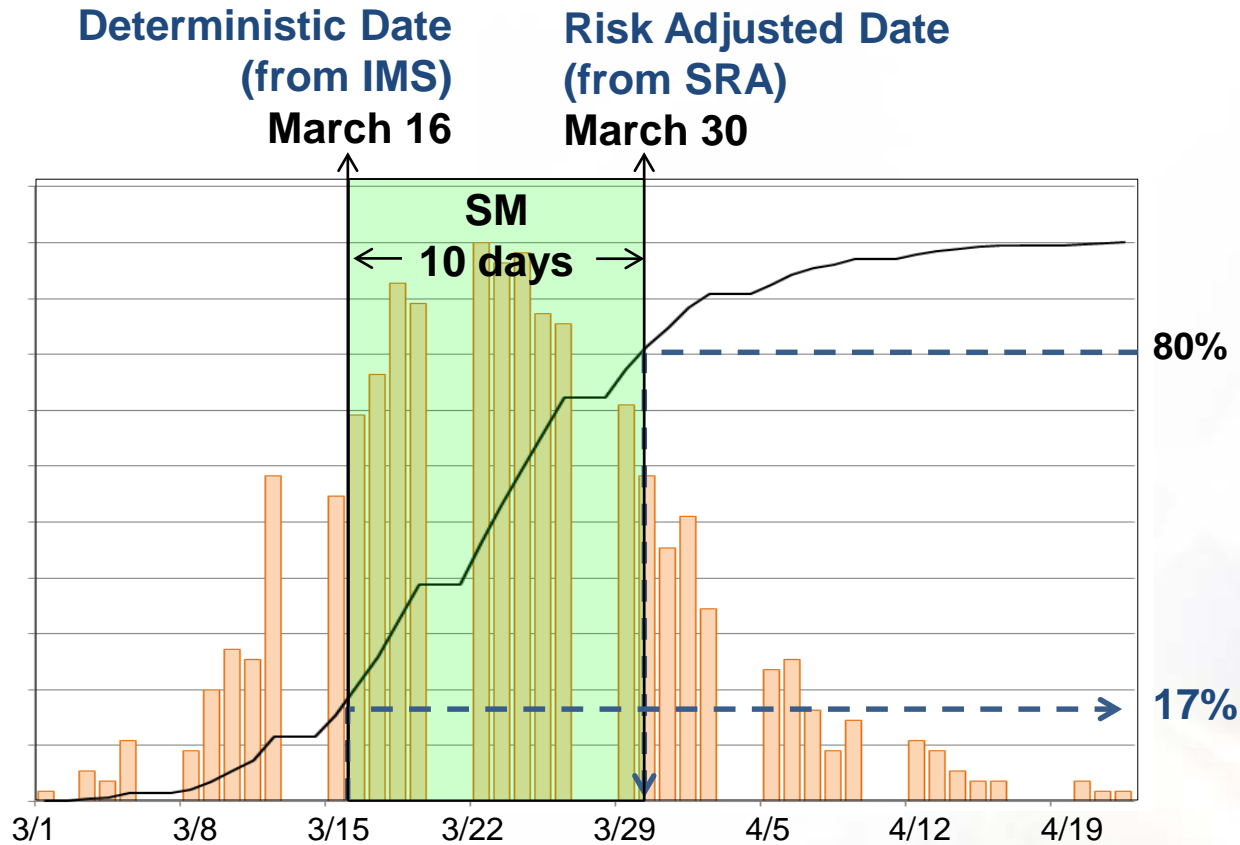
- not resource loaded
- baselined
- owned by the Program Manager
- only placed before the as the last task/activity/gap before a significant event
- discussed in Format 5

OK, not everything changed

Questions

Back Up Charts

SM Duration Calculation (optional technique)



PM may select a more reliable risk level (like 80%)

SM Duration = P(80) date – Current Forecast Finish

Note: the PM may choose a different “P” date depending on the project’s tolerance for risk – or may assess schedule risk in some other manner altogether

Proposed IPMR DID Wording

Schedule margin is an optional technique used for insight and management of schedule risks. Schedule margin is represented by a task or tasks within the IMS with no assigned resources (budget or ETC) and is established as part of the baseline. Schedule margin shall be under the control of the contractor's program manager. Schedule margin shall only be placed as the last task before key contractual events, significant logical integration/test milestones, end item deliverables, or contract completion. Schedule margin is associated with schedule risk as part of a formal risk management plan. Schedule margin may be directly or indirectly connected to discrete predecessor and successor activities and fall on critical paths. All schedule margin tasks shall be clearly and consistently identifiable. Significant changes to the status of schedule margin tasks and impacts to the program's primary critical path, if any, shall be discussed in Format 5.

Schedule margin tasks are intended to represent the time necessary to account for schedule risks/uncertainties. As such, schedule margin tasks are not associated with any specific scope or resources, will not be used to assess earned value performance, and are intended to improve program management's ability to accurately plan, forecast and manage scheduled work. Schedule margin durations should represent the estimated schedule risk/uncertainty to the subsequent event/activity and be traceable to the program's risk management system. One common method of estimating schedule margin duration(s) is to use the results of a Schedule Risk Assessment (SRA) to identify the amount of time between the deterministic finish (calculated without the presence of schedule margin) and a more likely completion determined by the finish date at a desired probability/confidence level. Schedule margin tasks are commonly first set with the baseline and forecasted durations being equal, however baseline durations for schedule margin tasks can be as short as zero days when the tasks required to accomplish the subsequent event are already baselined to consume all of the contractual time available. Emphasis should be placed on managing performance fluctuations with float/slack or other contingency options as needed, while reserving the consumption of margin duration to model a reduction of the associated risk/uncertainty. Schedule margin may be in the critical path with discrete predecessors and successors. Sufficient internal controls should be in place to allow the program team to understand and explain any change in critical or driving paths influenced by the inclusion of schedule margin in the IMS.

The DID discusses the placement of Schedule Margin in the IMS. In tailoring schedule margin requirements, the following principles should always be maintained:

- **Identifiable:** Schedule margin tasks shall be clearly and consistently identifiable.
- **Limited:** Restricted to an appropriate number of schedule margin tasks based on managing risk to increase schedule probability.
- **Duration:** Schedule margin tasks should represent the planned time necessary to account for risks/uncertainties to the subsequent significant event/activity.
- **Placement:** Schedule margin tasks shall only be placed as the last task before contractual events, significant integration/test activities, end item deliverables, or end of contract.
- **Controlled:** Owned by the contractor's program manager.
- **Reported:** Schedule margin status is reportable in Format 5. Significant changes should be discussed including reasons for changes and any impacts to the critical path.

Note: Schedule margin, as defined, is uniquely identified as a “risk management” approach. As such, it is established to address unmitigated risks and uncertainties. Other methodologies may be used as “float management” techniques but are not considered to be schedule margin. These techniques could include the uses of expedited deadlines/constraints or a buffer task (or lag) to consume time available between the forecasted event and its contractual requirement. Unlike schedule margin tasks, techniques used with the sole purpose of “float management” should not affect downstream discrete tasks or alter the critical/driving paths.

3.7.2.4. Schedule Margin. Schedule margin is an optional management method for accommodating schedule contingencies. It is a designated buffer within the schedule and does not have any resources assigned to it. Schedule margin shall have a baseline and be under the control of the contractor's program manager. Schedule margin, if any, shall only be placed as the last task/activity/gap before a contract event or end item deliverable. Any schedule margin planned as a task shall be clearly labeled "SCHEDULE MARGIN." Discuss in Format 5 the status of schedule margin, including reasons and impacts for changes, if any.

The DID 4.14.2 Intent Regarding Schedule Margin (with Examples).

Schedule margin (aka schedule contingency, buffer, reserve, or any other term which meets this definition) is any task not associated with specific scope or resources, and is used to increase the probability of on-time completion of the contract events. The term “contract events” includes major logical integration points, such as, contract events, major test and integration milestones, or end item deliverables. Schedule margin, if used, is typically set at the time the baseline is established and set with the baseline and forecast duration equal. A baseline schedule without contingency typically is not achievable. It is expected, based on performance, that some baseline tasks will vary. The schedule margin duration may be changed to remove the negative float from within the critical/driving path. The difference between baseline schedule margin and forecast is the amount of margin that has been used to mitigate actual task variation. The change in schedule margin duration is a risk indicator when compared to the percent complete (e.g., 10% complete and a 50% schedule margin duration reduction would indicate increasing schedule risk). Schedule margin may be in the critical path with discrete predecessors and successors.

The DID discusses the placement of Schedule Margin in the IMS. In tailoring schedule margin, the following principles should always be maintained:

- **Identifiable:** Must be titled “SCHEDULE MARGIN.” Longer names starting with this title are permitted.
- **Limited:** Restricted to a small number of margins and based on increasing schedule probability.
- **Controlled:** Owned by the contractor’s program manager.
- **Reported:** All schedule margins, if any, are reportable in Format 5. It is recommended that the Format 5 discussion include the activity ID, prior duration, and current duration and list every schedule margin identified task. Discussion should include changes, if any.