Monthly Apportioned Method

Prepared by: Jim Wood

NG Aerospace Systems

What is Monthly Apportioning?

- Monthly Apportioning calculates the Monthly Percent Complete for one or more base accounts and applies the weighed result to the Monthly Percent Complete of a Support effort. It effectively calculates the time offset associated with the $BCWP_{CUM}$ of one or more base accounts and applies the same time offset to calculate the $BCWP_{CUM}$ of a separate support account
    - Logic is that if support effort is directly tied to base effort, "as the base effort goes, so goes the support"; e.g., if Schedule Variance of the base account is equivalent to two weeks behind schedule, the tool calculates a BCWP for the support account that also equates to two weeks behind schedule

Key Points on Support Activity

- Support tasks are typically LOE because:
  - They are general (e.g. Management) activities with no definite or deliverable products
  - Budget for support may not align to the same profile as the base
    - Apportioned drives support earning by a fixed percentage of base at a BAC level

- Monthly Apportioned Method
  - Tasks are support activities (not Management) with no definite deliverable products
  - There is a direct correlation/relationship between the Base and Support efforts
  - Budget is scheduled over the period of performance – but not CER'd to base labor
  - Support performance "allocated" on performance of measurable effort being supported
  - Support effort reflects the same effective performance variance position by time (same time-aligned schedule offset) as measurable base effort

- Benefits to Program Management
  - More accurately quantifies schedule position of base <u>and</u> support effort
  - Supports more accurate forecasts of final cost and schedule outcomes
  - Reduces percentage of LOE– resulting in more meaningful measurement

Traditional Apportioned vs Monthly Apportioned Methods

NORTHROP GRUMMAN

- Both Apportioned Methods are used when supporting effort has a direct correlation to discrete / measurable effort
  - Traditional Apportioned Method uses a direct application of Base ITD Percent Complete to a Support effort
    - Only works when the BCWS÷BAC Percentage for both the Base and Support efforts match over time (expenditure profiles to match with a CER relationship over time)
    - Lack of a CER relationship causes results to be skewed
  - Monthly Apportioned Method applies Base Percent Complete to a Support effort on a month-to-month basis
    - Allows for a different resource profile than it's related base. Can be level loaded, front-end or back-end loaded, bell shaped…or whatever support plan the related base dictates (BCWS÷BAC Percentage for the Base and Support efforts **NEED NOT** match over time)
    - Base progress within any given month generates Support progress within the same month
    - Monthly Apportioning aligns the equivalent time status of the Base and Support effort

Monthly Apportioning supports intent of Traditional Apportioned Method without same limitations

Monthly Apportioned Example M/E March

NORTHROP GRUMMAN

Base / Monthly Apportioned Status - M/E March

Measurable Base	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	BAC
Monthly BCWS	200	160	150	120	100	100	90	80	
CUM BCWS	200	360	510	630	730	830	920	1,000	1,000
Monthly BCWP	150	90	80						
CUM BCWP	150	240	320						
Monthly SV	-50	-70	-70						
CUM SV	-50	-120	-190						
% Complete	15.0%	24.0%	32.0%						

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Monthly % Complete	100%	75%	0%						
Time Aligned Schedule status of Base									

Support - Level Load	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	BAC
Monthly BCWS	40	40	40	40	40	40	40	40	
CUM BCWS	40	80	120	160	200	240	280	320	320
Monthly BCWP	30	20	20						
CUM BCWP	30	50	70						
Monthly SV	-10	-20	-20						
CUM SV	-10	-30	-50						
% Complete	9.4%	15.6%	21.9%						

Base	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
CM SV	-50	-70	-70						
CUM SV	-50	-120	-190						
Support									
CM SV	-10	-20	-20						
CUM SV	-10	-30	-50						

- **Monthly Apportioned performance is based on the performance assessment of the related base**

- **Calculation driven by base BCWP**

- **Calculates BCWP earned for each month "Time Alignment"**
  - **Duration ahead or behind schedule**

- **Results in "Time Alignment"**
  - **Duration ahead or behind schedule**

Monthly Apportioned Example M/E May

Base / Monthly Apportioned Status - thru May

Measurable Base	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	BAC
Monthly BCWS	200	160	150	120	100	100	90	80	
CUM BCWS	200	360	510	630	730	830	920	1,000	1,000
Monthly BCWP	150	90	80	250	185				
CUM BCWP	150	240	320	570	755				
Monthly SV	-50	-70	-70	130	85				
CUM SV	-50	-120	-190	-60	25				
% Complete	15.0%	24.0%	32.0%	57.0%	75.5%				

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Monthly % Complete	100%	100%	100%	100%	100%	25%			
Time Aligned Schedule status of Base									

Support - Level Load	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	BAC
Monthly BCWS	40	40	40	40	40	40	40	40	
CUM BCWS	40	80	120	160	200	240	280	320	320
Monthly BCWP	30	20	20	70	70				
CUM BCWP	30	50	70	140	210				
Monthly SV	-10	-20	-20	30	30				
Schedule Variance	-10	-30	-50	-20	10				
% Complete	9.4%	15.6%	21.9%	43.8%	65.6%				

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	
Base									
CM SV	-50	-70	-70	130	85				
CUM SV	-50	-120	-190	-60	25				
Support									
CM SV	-10	-20	-20	30	30				
CUM SV	-10	-30	-50	-20	10				

- In May, Cumulative progress shows that equivalent Base tasks for April and May are complete and 25% of the equivalent June tasks are complete

- Therefore 100% of support effort planned in April and May and 25% of June are claimed for BCWP

- Relationship illustrates that both are now equivalently ahead of schedule
  - Base thru May
    - BCWS = 730
    - BCWP = 755
    - SV = 25
  - Support thru May
    - BCWS = 200
    - BCWP = 210
    - SV = 10

Monthly Apportioned Method vs. LOE

NORTHROP GRUMMAN

- Using Monthly Apportioned Method is an effective alternative to LOE when the effort has a direct correlation to discrete / measurable effort.
  - Ensures that when there are anomalies within the measurable technical base(s) the related support tasks are addressed as well
  - Monthly Apportioned effort has no separate deliverable products but there is a firm relationship with, and accountability to, a deliverable product

- Provides better and more meaningful measurement and performance visibility

- Reduces LOE percentage

Monthly Apportioned	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	BAC
CUM SV	(10)	(30)	(50)	(20)	10				

Versus

LOE	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	BAC
CUM SV	0	0	0	0	0				

More accurate EVMS data – lower LOE percentage

Monthly Apportioned vs. Traditional Apportioned Method

Monthly Apportioned	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	BAC
CUM SV	(10)	(30)	(50)	(20)	10				

Versus

Traditional Apportioned	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	BAC
CUM SV	8	(3)	(18)	22	42				

- **Traditional Apportioned Method skews results where resources are not time-phased in direct relation (CER'd) to the base**