IPMD Clearinghouse Working Group Notes

September 12, 2017 IPMD Meeting

Major Topics:

- Stop Work Orders
- LOE in the schedule
- Subcontract Management Reserve
- "Gate Month" EAC Write Up
- Quantifiable Backup Date (QBD's) under configuration control or not?
- "De Earning" Earned Value

Stop Work Orders (SWO)

This issue is where Procuring Contracting Officers (PCOs) confuse funding and EVMS budget and adjust contract target cost to reflect the remaining Estimate to Complete (ETC) instead of the unearned BCWS for the work that is being removed/reduced. This has been an ongoing issue for the last four years. The previous DoD Procedures Guidance and Information (PGI) lacked clarity and specificity to educate the PCO's to not adjust the remaining work effort on EVMS programs using the remaining ETC.

Joe Kusick and Gary Humphreys provided multiple examples to PARCA where the current PCO practice of reducing contract target cost by the ETC and not remaining unearned BCWS result in a perturbation of EVMS metrics by forcing the contractor to modify the EVMS baseline adversely impacting the EVMS metrics. Expect remedy and closure of this by Spring of 2018.

LOE in Network Schedules

Continued issues as to whether LOE would be contained in resources schedules, linking protocol, and resource loading. This issue has been turned over to the Planning and Scheduling Working Group. Yancy Qualls will facilitate closure on this topic by providing a write up on the topic.

See Attachment A.

Subcontract Management Reserve

Guidance is needed on how Subcontract Management Reserve (MR) is reflected and reported in the PRIME's baseline. Is it held and reported as part of the Prime's management reserve? Is it kept at the subcontractors reporting level and planned as a summary level planning package (SLPP), or a planning package (PP) at the end of control account(s), prorated into the Prime's WBS elements based on the budget for each of those WBS elements or even in Undistributed Budget (UB) at the Prime's level for baseline reporting?

Are there unique rules to be put in place for current period adjustments for Subcontract Management Reserve at the prime reporting level?

Does Subcontract Management Reserve reporting depend on what is written in the contract with the customer as to how this reserve will be reflected in the CPR/IPMR?

These are the topics as well as others for the Prime/Subcontract Working Group to address.

Gate Month EACs

Eric Schaum presented various options on how to report an ETC/EAC and specifically called out that what was reported in Column 15 of the IPMR was "rolled" actual costs as each month occurred. Column 6.C.1 reflected the most likely EAC and that was tied to the last Comprehensive EAC with incremental adjustments. Key points of the presentation is that culture will have to change for many organizations. CAMs will have to be trained. Controls will have to be put in place. Eric will write up a "white paper" on this topic and this will be shared with government/industry for potential inclusion in guidance documentation.

See Attachment B.

Quantifiable Backup Data (QBDs)

This topic continues to generate a lot of discussion. Specifically, are QBD's a tasking matrix or do they need to be under configuration control? More of a challenge exists in an immature configuration (R&D or LRIP) environment. Relevant examples were discussed and Mike Atwood will prepare a white paper for sharing with the clearinghouse as to a suggested change control process for QBD's.

"De Earning" Earned Value

This topic brought about significant discussion with the Clearinghouse working group. The discussion centered around LOE and when this type of effort could be "De Earned". It became very clear that controls have to be in place and the span of time could not be great before it would be discovered that there was a disconnect between actual effort and costs incurred versus the earnings taken for the LOE.

Bottom line: does the BCWP Earned and the Actual Costs incurred significantly distort the Performance Measurement Baseline (PMB)? What controls are in a company's process description or EVMS procedures? Proactive management of LOE is encouraged but the retroactive 'harvesting' of budget already earned was debated as to the time frame this budget and eventual earned value could be moved. Some believe that if there are no actuals in the immediate prior month that the budget can be moved. For example, from March if the discovery of no actuals occurs by the first week of April. Others believe that NO retroactive budget changes should be allowed. The resultant behavior is more proactive management of LOE. When LOE earns BCWP with no ACWP, it should be flagged in the current month where this occurred and managed accordingly.

There was also a lot of discussion on Earning and De Earning effort for discrete activities. Again many questions arose, such as is there management reserve remaining which could be used for budgeting rework effort? Is the De Earning a result of negotiation loss on a Subcontract? Is it a result of poor performance where effort was overstated? Clearly this is an area where a "white paper" is needed regarding when to use this process and what controls should be in place. Joe Fischetti and Mike Atwood took the action to collaborate on a "white paper" prior to the next NDIA meeting for information sharing with our group.

See Attachment C.

Attachment A
Treatment of Level of Effort in an Integrated Master Schedule

Prepared by the Planning and Scheduling Working Group

Any discussion of the proper treatment of Level of Effort (LOE) activities in an Integrated Master Schedule (IMS) should begin with the definition of LOE. LOE tasks are typically supportive or administrative in nature. Objective measurement of an LOE activity is impracticable and provides little, if any, visibility into actual performance. For the purpose of this paper, all references to LOE fit this description and would not be better modeled as Discrete or Apportioned Effort.

Including LOE activities in an IMS is optional

An IMS can be fully compliant with or without the inclusion of LOE. Some companies prefer the IMS to be a "one-stop shop" for all contracted effort. This can be accomplished by including LOE in the IMS. Other companies track LOE in tools outside of the schedule. And since true LOE will not impact other discrete effort, excluding LOE from the IMS will have no adverse effect on critical path calculations.

LOE Predecessors may be Discrete or other LOE (or none at all)

Discrete: When LOE tasks are being performed in support of other discrete effort, it may be appropriate for those same discrete activities to be the predecessors to the LOE support activity. For example, if flight test is modeled by a series of 10 discrete tasks, the start of the earliest task will determine when the "Flight Test Support" will begin. In addition, the completion of the final discrete flight test activity will drive the finish of "Flight Test Support".

Linking LOE to the discrete predecessor activities they support has at least one clear benefit. When LOE activities are actually performed either earlier or later than their baseline plan, data anomalies will occur. If work is performed in a period prior to the baseline start or after the baseline finish, there will be actuals (ACWP) without performance (BCWP). And if work is actually started in a period later than the baseline start or finished in a period prior to the baseline finish, there will be performance (BCWP) without actuals (ACWP). By having the timing of LOE activities automatically adjusted to stay aligned with the discrete tasks they support, there is an early warning of a future baseline variance. This may allow for time to adjust the baseline dates as necessary to avoid the reporting anomalies.

Other LOE: While some LOE is performed in support of specific discrete activities, other LOE is performed over a set time period. And, since it is not advisable to have LOE that stretches for long periods of time, often companies will break up this LOE into a series of shorter activities. When this occurs, one way to model this series of LOE activities is to have one LOE activity be a predecessor to the following LOE activity. For example, "1st Quarter 2019 Project Management Support" may be the predecessor to "2nd Quarter 2019 Project Management Support".

No Predecessor (constrained): An alternative to linking LOE activities to other LOE activities is to simply constrain the activity to begin (or end) at the desired time. For example, a "Start No Earlier Than" constraint of 1/1/19 could be applied to the "1st Quarter 2019 Project Management Support" activity. In this way, the LOE activity would be scheduled to start on the first working day of 2019.

LOE Successors may be other LOE (or none at all), but not Discrete

LOE: As previously stated, one appropriate method to model a series of LOE activities is to logically tie them to one another. In keeping with the previous example, the successor to "1st

Quarter 2019 Project Management Support" could be "2nd Quarter 2019 Project Management Support".

Not Discrete: Since true LOE is typically supportive or administrative in nature and as such will result in no predetermined deliverables, no other discrete task should be waiting for an LOE activity to complete. While the completion of flight testing may drive many other discrete activities/deliverables, no other discrete task should be held up by the LOE activity of "Flight Test Support".

No Successor: As stated above, since LOE activities should never drive discrete activities, it may be appropriate for LOE activities to have no successor at all.

LOE should never fall on a critical/driving path

The critical path is the longest continuous sequence of activities driving project completion (the final discrete activity/event in the project). Similarly, a driving path is the longest continuous sequence of activities driving any other interim event. As long as LOE activities are not linked (directly or indirectly) to discrete activities/deliverables, it will be impossible for them to reside on any chain of activities leading to a discrete activity/deliverable. Because of this, properly modeled LOE activities will never fall on a critical/driving path.

Summary

There is no requirement to include LOE activities in an IMS. However, if LOE is included in an IMS, the LOE activities:

- are not required to have predecessor or successor logic,
- may be held in place with a constraint,
- may be logically linked to other LOE activities,
- may have discrete predecessors,
- may not be linked directly or indirectly to discrete successors,
- should not fall on any critical or driving path

In addition, it should be noted that when predecessors/successors are appropriately linked to LOE activities, various relationships may be used. It may be appropriate to have Finish-to-Start, Start-to-Start, and Finish-to-Finish predecessors/successors. It is unlikely that a Start-to-Finish relationship would ever be the best method for modeling ties to/from LOE activities.

Attachment B
Gate Month EACs

Summarized by Eric Schaum

Topic Addressed

IPMR Control Account EACs: How they are calculated, maintained, updated and reconciled with the program most likely EACs?

Background

Topic arose from the question: “Do Control Account level EACs on the IPMR have to reflect the latest actuals (actuals through the current reporting period)?”

The Control Account EACs reported in column 15 of the IPMR represent the contractors reported EAC. Depending on the software tool used, this data can be calculated a number of different ways. One calculation methodology involves adding actuals through a user-specified “gate month” to timephased ETC from the gate month forward; this produces an EAC that does not include actuals through the most recent reporting period. Guidance from DCMA was sought to assess the validity of this "Gate Month" method of generating Control Account level EACs.

Discussion

Although it was never explicitly stated that utilizing a gate month in the calculation of Control Account ETCs is prohibited, there are a number of issues to consider:

- **Impact of IPMR Format 7**

  With the addition of the Format 7 (Electronic History and Forecast File) requirement, timephased ETC data at the reporting level is provided as part of the IPMR. Section 3.8.5 of the IPMR DID states:

  > *“Time-phased cost projection shall consist of historical, time-phased actual costs (ACWP) plus future time-phased Estimate To Complete (ETC) for all the WBS elements reported. The total of the time-phased cost must reconcile with Format 1 Block 8 Column (15) (EAC) for the same reporting month.”*

  As a result, data is provided that allows the customer to calculate ETC based on Actuals through the most recent reporting period. Reporting Control Account EACs that use a prior month as the gate month may result in different EAC calculations, leading to differences that the CAM would be expected to address.

- **EVMSIG Guideline 27**

  The purpose of guideline 27 is to ensure that the estimate to complete the contract is periodically reassessed and adjusted as needed. Regarding control account EACs, the EVMSIG states:

  > *“Control Account Managers (CAMs) review control account EACs monthly, and update as required, based on the EVM performance metrics, variances analyzed and assessment of remaining work.”*

  The requirement to take into consideration performance to date monthly requires CAMs to take into consideration actuals and performance through the current reporting period and update EACs accordingly.

- **Program Most Likely EAC**

  The program's most likely EAC, reported in Block 6.c.1 of the IPMR Format 1 is the value that the contractor's management believes is the most possible outcome based on a knowledgeable estimation of all authorized work, known factored risks, and probable future conditions. This EAC need not agree with the Control Account EACs but must be reconcilable to them.

  > *When the most likely management EAC differs from the total entered in Column (15) of Format 1, explain the difference. (IPRM DID, Section 3.6.4)*

- **Negative ETC**

  Negative ETC is a situation that can arise when ITD actuals for an IPMR element are greater than the reported element EAC. This can occur when using a gate month to calculate ETC if the actuals recorded subsequent to the gate month are greater than the timephased ETC. DCMA and PARCA indicated that this situation would always result in an audit finding and should be avoided. Using actuals through the most recent reporting period in the calculation of the EAC will prevent occurrences of negative ETC.

- **Changes to the Control Account ETC**

  When updating the Control Account EACs to include actuals through the most recent reporting period, the EAC can be expected to fluctuate with monthly overruns and underruns; this should not be cause for concern. There is no requirement in the DoD EVMSIG to document individual changes to the Control Account EAC. It is advisable to establish internal thresholds to document changes beyond normal monthly fluctuations. Thresholds should take into account EAC change amounts from the last comprehensive EAC to avoid a situation where EAC continues to grow just under threshold every period, resulting in a large net growth over time.

- **EAC Validity**

  Guideline 27 requires that Control Account managers review their EACs monthly and update as required. The validity of the EAC is often assessed by comparing the Cost Performance Index (CPI) to the To Complete Performance Index (TCPIEAC). Internal thresholds on EAC validity metrics are recommended that require CAMs to justify or update their ETC when exceeded.

Conclusion

Although not strictly prohibited, using a gate month other than the most recent reporting period for the generation of Control Account EACs introduces a number of factors that can raise questions about the validity of the EAC. If a gate month is used, CAMs must be prepared to discuss the impact of performance since the gate month and assess the EAC validity accordingly. Care must be taken to avoid situations of negative ETC due to cumulative overruns.

When using actuals through the most recent reporting period in the calculation of ETC, the CAM must review and assess the validity of the EAC on a monthly basis, using metrics such as TCPI-CPI to determine where updates or justifications are required. Finally, change controls should be put in place to capture significant EAC changes, while allowing for monthly fluctuations due to normal monthly variances.

Attachment C
“De Earning” Earned Value or Negative BCWP

Taking Negative BCWP

IPMD Clearinghouse Working Group
September 2017

				%	%	Cumulative		
Description	Work Package	PMT	BAC	Complete	Spent	BCWS	BCWP	ACWP
Mgmt / SE	A	LoE	1428	30%		434	434	
Inst GSE	B	% Comp.	1880	96%		1880	1807	
EM Electronics	C	% Comp.	595	79%		595	473	
Duplexer Simulator Developemnt	D	% Comp.	231	91%		231	209	
Initial FM	E	% Comp.	377	40%		187	151	
Inst GSE	PP01	Plng. Pkg.	724	0	0			
Inst I & T	PP02	Plng. Pkg.	4801	0	0			
		C/A Total	10036	31%	47%	3327	3074	5512

Fictitious Control Account:

- **Requirements driven, science instrument**
- **Values are in $K**
- **Descriptions have been sanitized/altered for this presentation**
- **WPs C, D, and E are being used for this case study**

Assumptions:
There were technical issues that required a revisit of existing lower level requirements driving the design and functionality of the product being built then delivered, there was no added scope, and the BAC was unaffected.

WBS	Task Name	#WP	#PMT	Duration	Start	Finish	Baseline Start	Baseline Finish	#Weight
05.06.07	**Duplexer Simulator Development Task**	**D**	**% Cmp**	**266 days**	**5/31/16**	**6/21/17**	**7/11/16**	**11/23/16**	**100**
05.06.07	Procure RF Parts			50 days	7/8/16	9/16/16	7/11/16	9/2/16	24.5
05.06.07	Receive RF Parts			88 days	9/19/16	1/27/17	9/19/16	11/23/16	7.5
05.06.07	Procure and receive custom waveguides			184 days	5/31/16	2/24/17	7/11/16	9/2/16	24.5
05.06.07	Fab Duplexer Simulator Chassis			40 days	10/17/16	12/13/16	9/6/16	9/8/16	7.5
05.06.07	Populate chassis with parts - Dx Sub			48 days	1/17/17	3/24/17	9/9/16	9/15/16	7.5
05.06.07	Integrate controller board - Dx Sub			55 days	3/27/17	6/12/17	9/9/16	9/15/16	7.5
05.06.07	Assemble waveguides , controller , and chassis - Dx Sub			6 days	3/27/17	4/3/17	9/16/16	9/19/16	7.5
05.06.07	Test and calibrate duplexer simulator			55 days	4/4/17	6/20/17	9/20/16	9/26/16	10.5
05.06.07	Deliver Duplexer Sim to KaRIn I&T			1 day	6/21/17	6/21/17	9/27/16	9/27/16	3
05.06.07	**Initial FM GSE**	**E**	**% Cmp**	**232 days**	**1/30/17**	**1/2/18**	**2/27/17**	**6/23/17**	**100**
05.06.07	S/C Command & Tlm Simulator additions - part 2			40 days	4/28/17	6/23/17	4/28/17	6/23/17	17.93
05.06.07	**EGSE Digital I/F FMEA**			**39 days**	**1/30/17**	**3/24/17**	**2/27/17**	**6/23/17**	**32.19**
05.06.07	Draft (EGSE Digital I/F FMEA)			15 days	1/30/17	2/17/17	2/27/17	4/14/17	14.26
05.06.07	Final (EGSE Digital I/F FMEA)			4 days	3/21/17	3/24/17	4/17/17	6/23/17	17.93
05.06.07	**Define FM MGSE**			**213 days**	**2/27/17**	**1/2/18**	**2/27/17**	**6/23/17**	**38.78**
05.06.07	Construct FM MGSE list - part2			15 days	2/27/17	3/17/17	2/27/17	3/17/17	7.43
05.06.07	Preliminary FM MGSE storyboard			45 days	9/21/17	11/22/17	3/20/17	5/19/17	20.25
05.06.07	Update FM MGSE storyboard			24 days	11/27/17	1/2/18	5/22/17	6/23/17	11.1
05.06.07	Fab HPA handling FM MGSE			29 days	10/26/17	12/7/17	5/15/17	6/23/17	11.1
05.06.07	**EM Electronics I&T**	**C**	**% Cmp**	**269 days**	**5/31/16**	**6/26/17**	**5/31/16**	**2/24/17**	**100**
05.06.07	Complete KaRIn EM I&T planning			30 days	5/31/16	7/12/16	5/31/16	6/28/16	10.5
05.06.07	Draft IBAT for Mechanical MGSE Set-up			25 days	11/7/16	12/13/16	11/7/16	12/13/16	2
05.06.07	Draft IBAT for RFU installation			20 days	12/8/16	1/4/17	12/8/16	1/9/17	2
05.06.07	Draft IBAT for KDES Installation			15 days	12/15/16	1/10/17	12/15/16	1/9/17	2
05.06.07	Draft IBAT for EM waveguide installation			10 days	1/3/17	1/17/17	1/3/17	1/17/17	2
05.06.07	Draft IBAT for HPA installation			23 days	3/22/17	4/21/17	1/9/17	1/30/17	2
05.06.07	Draft IBAT for Electronics Integration			20 days	11/17/16	12/16/16	11/17/16	12/16/16	2
05.06.07	Prepare for the EMC (EM) testing			78 days	8/1/16	11/17/16	6/29/16	11/17/16	42
05.06.07	KaRIn EM I&T Prep			23 days	1/24/17	2/24/17	11/22/16	1/31/17	12
05.06.07	Install and test KROC SW			1 day	1/27/17	1/27/17	1/27/17	1/27/17	0
05.06.07	Perform EM RFU Acceptance Test (ATP)			3 days	4/25/17	4/27/17	1/18/17	1/20/17	3
05.06.07	Perform EM KDES/EGSE IF test			3 days	5/9/17	5/11/17	2/15/17	2/17/17	2
05.06.07	EM RFU Hyperbox safe to mate			2 days	5/12/17	5/15/17	2/21/17	2/22/17	2
05.06.07	Collect RFU Hyperbox measurements (electrical)			1 day	5/16/17	5/16/17	2/6/17	2/13/17	2
05.06.07	Perform EM KDES/RFU Hyperbox IF/ timing test (low power)			3 days	5/24/17	5/26/17	1/25/17	1/25/17	0
05.06.07	Abbreviated RFU/Hyperbox receive path tests			10 days	5/30/17	6/12/17			0
05.06.07	Integrate RFU Duplexer Simulator with RFU Hyperbox			3 days	6/22/17	6/26/17	1/23/17	2/3/17	6
05.06.07	Facilities upgrade (crane rework)			5 days	6/13/17	6/19/17			0
05.06.07	Install EM RFU (Hyperbox) on a thermal plate			0.5 days	6/20/17	6/20/17	1/17/17	1/17/17	3
05.06.07	Install EM RFU on a metering structure			0.5 days	6/20/17	6/20/17	1/23/17	1/23/17	2
05.06.07	Install EM KDES			1 day	6/21/17	6/21/17	2/14/17	2/14/17	2
05.06.07	Install waveguides on the EM structure elements			2 days	6/22/17	6/23/17	1/18/17	1/20/17	1.5

IMS and weighted task QBD

- **This example employs CAM derived pre-established task weighting values established during the initial during planning**
- **Institutional procedures/practices drive the more detailed activity below the IMS**
- **Task/Product weights are against the WP BAC**
- **WP E will not have negative BCWP**
- **WP C and D will demonstrate minor adjustments in BCWP**

WP D: The technical issues were related to the material used to fab the simulator chassis thus impacting parts assembly and integration with controller board.
Waveguides were assembled but not integrated. Disassembly/reassembly will be required.

WP C: KROC SW was received and installed, RFU and KDES/EGSE testing was not successful. Functional testing and analysis reveal a coding issue with the final release of the SW delivered.

- **CAM initiated engineering changes (ECN/ECR) with program controls support.**
- **WBS SOW review along with the decomposing of requirements down to the relevant WBS**
- **Additional technical evaluations and test models initiated to redefine exit criteria**

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Inst I & T	PP02	Plng. Pkg.	4801	0	0			
		C/A Total	10036	31%	47%	3327	3074	5512

Control Account Budget/Performance/Actual Cost (pre-adjustment)

SPI	CPI
0.92	0.56

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05.06.07	Draft IBAT for EM waveguide installation			10 days	1/3/17	1/17/17	1/3/17	1/17/17	2	
05.06.07	Draft IBAT for HPA installation			23 days	3/22/17	4/21/17	1/9/17	1/30/17	2	
05.06.07	Draft IBAT for Electronics Integration			20 days	11/17/16	12/16/16	11/17/16	12/16/16	2	
05.06.07	Prepare for the EMC (EM) testing			78 days	8/1/16	11/17/16	6/29/16	11/17/16	42	
05.06.07	EM I&T Prep			23 days	1/24/17	2/24/17	11/22/16	1/31/17	12	
05.06.07	Install and test KROC SW			1 day	1/27/17	1/27/17	1/27/17	1/27/17	0	0
05.06.07	Perform EM RFU Acceptance Test (ATP)			3 days	4/25/17	4/27/17	1/18/17	1/20/17	0	3
05.06.07	Perform EM KDES/EGSE IF test			3 days	5/9/17	5/11/17	2/15/17	2/17/17	0	2
05.06.07	EM RFU Hyperbox safe to mate			2 days	5/12/17	5/15/17	2/21/17	2/22/17	2	
05.06.07	Collect RFU Hyperbox measurements (electrical)			1 day	5/16/17	5/16/17	2/6/17	2/13/17	2	
05.06.07	Perform EM KDES/RFU Hyperbox IF/ timing test (low power)			3 days	5/24/17	5/26/17	1/25/17	1/25/17	0	
05.06.07	Abbreviated RFU Hyperbox receive path tests			10 days	5/30/17	6/12/17			0	
05.06.07	Integrate RFU Duplexer Simulator with RFU Hyperbox			3 days	6/22/17	6/26/17	1/23/17	2/3/17	6	
05.06.07	Facilities upgrade (crane rework)			5 days	6/13/17	6/19/17			0	
05.06.07	Install EM RFU (Hyperbox) on a thermal plate			0.5 days	6/20/17	6/20/17	1/17/17	1/17/17	3	
05.06.07	Install EM RFU on a metering structure			0.5 days	6/20/17	6/20/17	1/23/17	1/23/17	2	
05.06.07	Install EM KDES			1 day	6/21/17	6/21/17	2/14/17	2/14/17	2	
05.06.07	Install waveguides on the EM structure elements			2 days	6/22/17	6/23/17	1/18/17	1/20/17	1.5	

IMS and weighted task QBD

WP D: The technical issues were related to the material used to fab the simulator chassis thus impacting parts assembly and integration with controller board. Waveguides were assembled but not integrated. Disassembly/reassembly will be required.

- **BCWP adjustment: Total percent value of task(s) = -30%**
- **Represents -$68K adjustment to the CTD $209K BCWP taken**

WP C: KROC SW was received and installed, RFU and KDES/EGSE testing was not successful. Functional testing and analysis reveal a coding issue with the final release of the SW delivered.

- **BCWP adjustment: Total percent value of task(s) = -5%**
- **Represents -$35K adjustment to the CTD $463K BCWP taken**

				%	%	Cumulative			
Description	Work Package	PMT	BAC	Complete	Spent	BCWS	BCWP	ACWP	
Mgmt / SE	A	LoE	1428	30%		434	434		
Inst GSE	B	% Comp.	1880	96%		1880	1807		
EM Electronics	C	% Comp.	595	74%		595	438		BCWP adjustment
Duplexer Simulator Developemnt	D	% Comp.	231	61%%		231	141		BCWP adjustment
Initial FM	E	% Comp.	377	40%		187	151		
Inst GSE	PP01	Plng. Pkg.	724	0	0				
Inst I & T	PP02	Plng. Pkg.	4801	0	0				
		C/A Total	10036	30%	47%	3327	2971	5512	BCWP adjustment

Control Account Budget/Performance/Actual Cost (post-adjustment)

SPI	CPI
0.89	0.54