Joint Strike Fighter – Lightning II
Monthly Assessment Report

Prepared for the Joint Strike Fighter Program Office
Prepared by DCMA Lockheed Martin Fort Worth

November 2009

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Program Summary

Flight Test: BF-1 ferry flight departed LMFW on 13 Nov 09 to Marietta, followed by its 15 Nov 09 flight to Pax (flight 27). AF-1 first flight occurred on 14 Nov 09 (baseline was 14 May 09). Five more airworthiness flights are planned for the rest of November. BF-2 CTOL engine runs are planned just prior to Thanksgiving. BF-3 and BF-4 IPP/Engine runs are planned towards the end of November.

SDD/LRIP Production Status	(As of 8 Nov 09)
Forward Fuselage	12 – Assembly 13 – Mate/Sub-Systems/Final
Center Fuselage	17 – Assembly/On-Dock 13 – Mate/Sub-Systems/Final
Aft Fuselage	10 – Assembly/On-Dock 13 – Mate/Sub-Systems/Final
Wing	15 – Assembly 13 – Mate/Sub-Systems/Final
EMAS	5 – (AF-9, AF-8, AF-7, AF-6 & AF-4)
Moving Line/Final Assembly	8 – (AF-3, AF-2, CF-1, CJ-1, CG-1, BH-1, CF-3 & BF-5)
Run Stations	5 – (BF-2, AF-1, BF-3, BF-4 & BF-1)
Labs	3 – (BG-1, CG-1 & CF-2)
Deployed	4 – (AG-1, AJ-1, AA-1, & CG-1)

Schedule: Master Schedule 6.2 continues to be projected for early CY2010. This will be the Program's sixth schedule revision. Recent Program summary charts, scorecards, and management briefings do not consistently depict performance to the master schedule baseline. Program target dates for SDD aircraft rollout, first flight, and ferry activities depict test focus work plans that use varying target dates, overlooking performance to the schedule baseline. As a result, the previously shown key aircraft tracking to first flight charts in this report (Reduce Schedule Variation section) have been discontinued. Performance data to baseline schedule variance will replace those charts.

DD-250 Deliveries: LRIP 1 is an average of 5.5 months behind to deliveries as of the end of FY2009. For LRIP 2, AF-9 moved to EMAS on 8 Sep 09 (baseline was 5 Jun 09). The current average baseline variance for the Wing moving to Mate is ~2 months. Overall, LRIP 2 is an average of 4.5 months behind to aircraft deliveries as of the end of FY2009. For LRIP 3, progress on BF-12, AF-14 and BF-13 Wing build continues. AF-14 and BF-12 [redacted] activities started approximately 1 month late to the baseline, however; BF-13 [redacted] activities stared on-time to the schedule baseline. GFE deliveries such as Lift Fan assemblies, Roll Post's and Engine's on-dock are the initial critical path LRIP 3 concerns. The Maintain LRIP Aircraft Delivery section of this report provides more detail of LRIP build activities.

[redacted] **(Center):** AF-11 shipped on schedule (19 Oct 09) to LM Aero. LM Aero has directed [redacted] to delay shipment of AF-12 from 3 Nov to 17 Dec and AF-13 from 11 Nov to 19 Jan 10. [redacted] expects BF-6 delivery (scheduled for 15 Dec 09) to be delayed, but formal notification has not been received to date. [redacted] This purge has created part shortages on the assembly line. [redacted] is generating a white paper documenting [redacted]

[redacted] is working to mature the LRIP variance process with LM Aero. Currently, DCMA [redacted] expects growth in the current list of Major [redacted] variances submitted for AF-6 and on. Variances are likely missing due to unincorporated CRs and other known design deficiencies. DCMA [redacted] is reviewing approved change requests and the [redacted] technical issues database for potential variance conditions. DCMA [redacted] will reconcile this list with [redacted] to ensure all variances have been documented for each LRIP aircraft. Estimated completion is November 2009.

[redacted] **(Aft/Empennage):** Lockheed Martin provided [redacted] with an updated Major Assembly delivery schedule in August, however; the new schedule has not been incorporated into the applicable subcontracts, and may not occur until December. DCMA-[redacted] schedule analysis for the AFT, VT and HT is based on the dates included in purchase order M5981001 Amendment 14 (for LRIP1) and M6604 Attachment B1 (for LRIP2).

The [redacted] F-35 JSF Key Suppliers vendor scorecard on-time percentage rating for the month of October 2009 is 77% (a decrease of 6% from the September MAR). This on-time delivery rating is predicted to stay Red as a result of: [redacted] receiving the subcontract late from Lockheed Martin, Empennage HT line LRIP 3 purchase orders released late to vendors due to no availability of order requirements from [redacted] engineering department, and [redacted] key suppliers adjustment period from adding four new key suppliers. DCMA-[redacted] JSF SPT team members will continue to monitor and track [redacted] ability to control and measure their F-35 JSF key suppliers performance to delivery schedule adherence.

[redacted] is implementing their corrective action plan in response to the DCMA CPSR review; all actions should be complete by 30 November 2009. Until the Purchasing System is approved, consent to subcontract is being performed by the cognizant DCMA-[redacted] ACO in accordance with FAR 44.201-1(b)(2)(i).

Maintenance and Quality Verification Stand-Down: On 23 Oct 09 a [redacted]

This incident triggered a maintenance and quality verification stand-down to determine systemic root causes for increasing aircraft impoundment and suspension of operation incidents to date. As part of this action, DCMA has initiated an independent review of LM Aero's analysis. The focus areas are Software, Rework/Repairs, System Check-Out Procedures (SCOP's), and Aerospace Equipment Instructions (AEI's). The plan for DCMA analysis includes reviewing the data LM Aero used to make their recommendations and providing an independent assessment. The follow on for this activity is to identify specific areas DCMA has concern with and review those areas as well. This activity will have status updated monthly in the JSF MAR until completed.

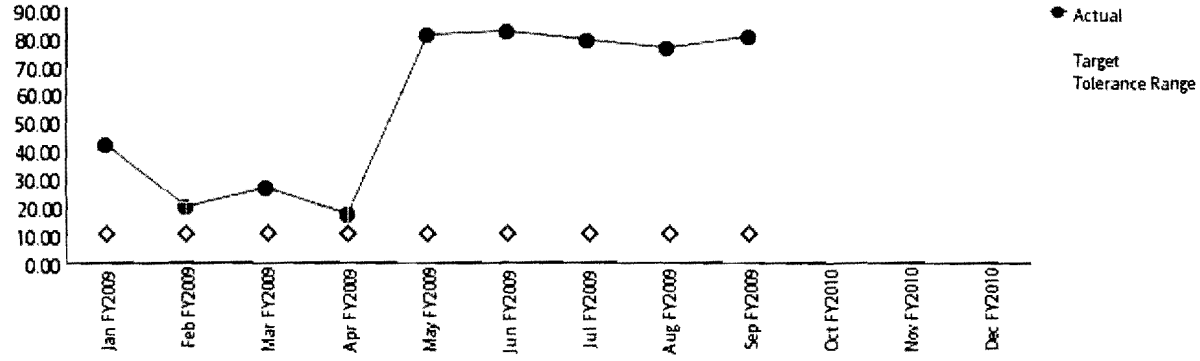
Report Scope

The Joint Strike Fighter – Lighting II Monthly Assessment Report (MAR) is focused on reporting the status of Customer Outcomes and associated Performance Indicators identified in the Memorandum of Agreement with the JSF Program Office. Interdisciplinary teaming between DCMA personnel is used to ensure customer outcomes are ascertained; risks to outcomes are identified and assessed.

Title	Performance Indicator	Metric Rating Criteria	Rating
Maintain LRIP Aircraft Delivery Rate	Maintain LRIP aircraft delivery to within 10 M-days of contract delivery date	Green: ≤10 M-day variance to delivery date Yellow : 11 – 21 M-day variance Red: >21 M-day variance to contract delivery date	
Improve Supplier Delivery Rate	JSF Key Suppliers have an average delivery rating of greater than or equal to 96%	Green: 100.0 to 96.0% Yellow: 95.9 to 87.0% Red: ≤86.9%	
Improve Supplier Quality Rate	Each delegated supplier has quality ratings >96%	Green: ≥ 96% Yellow: 87%-95% Red: <87%	Y
Maintain Cost and Schedule	Resource requirements are aligned in support of funding and budget allocations. IEAC data and projections match actual performance within + / - 10% of contractors budget at completion	Green: 1.0 to 0.95 variance (5%) Yellow: 0.95 to 0.90 variance (5% to 10%) Red: 0.90 or greater variance (>10%)	G
Reduce Schedule Variation	Reduce the average Wing touch labor variance "at move to mate" to within 10% by SDD completion	Green: < -10% Yellow: -10% to -15% Red: > -15%	Y
Non-Conformance Reduction	10% reduction in MRB discrepancies per year	Green: < the goal of 21 Yellow: within 10% of the goal Red: >10% above the goal of 21	G
Safety of Flight (SoF)	Number of SOF inspections accepted on first attempt to the number of SOF inspections conducted	Green: 100% Yellow: 95%-99.9% Red: <94.9%	G
Improve Software Productivity	[redacted]	[redacted]	G
Improve Minor Variance	Maintain at least a 95% correct classification rate of variances	Green: % of properly classified minor variances is ≥95% Yellow: 90% up to but not including 95% Red: <90%	G
Improve FCA/PCA	Ensure that at least 95% of systems reviewed in interim FCA/PCAs meet the design requirements	Green: % of parts meeting design requirements is ≥ 95% Yellow: 90-94% Red: <90%	G
Improve Minor Change	Ensure that 95% of minor changes are correctly classified	Green: >95% Yellow: ≥90% to ≤95% Red: <90%	G
Maintain Assist Audit Request Timing	Process contractor/PCO requests for domestic/international Assist Audits within 2 business days 85% of the time	Green: >84% Yellow: 75%-84% Red: <75%	G
Maintain FAR Requests for Contract Closeout	Maintain 94% contract closeout actions within the Federal Acquisition Regulation (FAR) mandated timeframes	Green: >93% Yellow: 85%-93% Red: <85%	
Reduce Cancelling Funds	90% of canceling funds will be billed and/or de-obligated before the end of the fiscal year	Green: >89% Yellow: 80%-89% Red: <80%	

Maintain LRIP Aircraft Delivery Rate

NSF198AJ17: Description: Maintain LRIP aircraft delivery to within 10 M-days of contract delivery date. The Maintain LRIP Delivery Rate is an Integrated Master Schedule (IMS) based metric of the monthly average (+/-) float manufacturing days (M-days) of all reported LRIP aircraft to their contract delivery schedule (DD-250). Goal is to maintain delivery of LRIP aircraft to within 10 M-days of contract delivery date. **Note: Float M-days are entered as positive values, but represent behind schedule status.** Monthly IMS LRIP CDRL data is directly used as data source. Data shall be updated NLT the 20th of each month. Total Float of all reported aircraft that have passed their baseline start date will be averaged monthly for metric. Green: ≤10 M-day variance to delivery date, Yellow: 11 – 21 M-day variance, Red: >21 M-day variance to contract delivery date.



Metric Status: Red

Trend: Slight degradation from September.

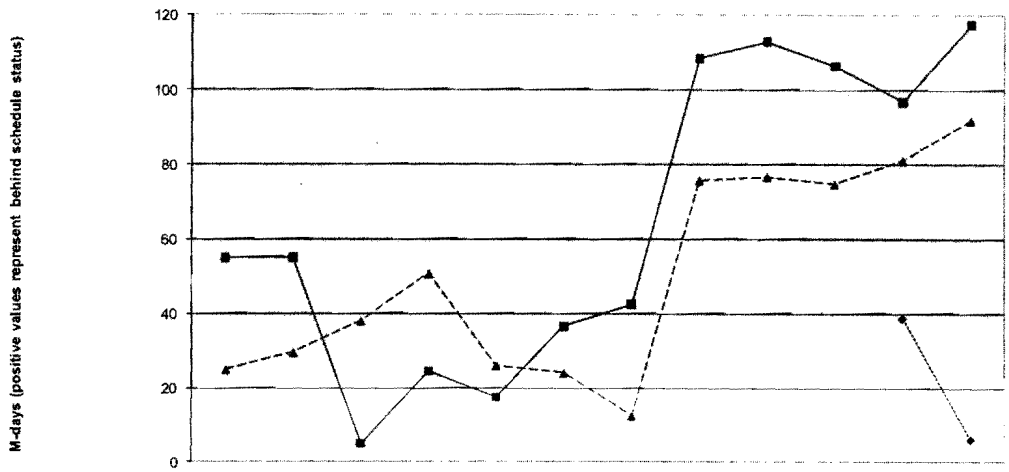
Summary of Metric Status: Metric is -80 Mdays for month end September. This average consists of all LRIP 1 and 2 aircraft, and three LRIP 3 aircraft that have passed their baseline start dates.

Root Causes: LRIP 1 – Critical paths degraded slightly from last month, with AF-6 showing -92 and AF-7 showing -142 Mdays late to DD-250. The AF-6 and AF-7 current critical path driver is the [redacted] Mitigation efforts in the canopy shop as well as point of installation decisions are being reviewed to reduce impact. LRIP 1 is an average of 5.5 months behind to deliveries as of the end of FY2009.

LRIP 2 – Critical paths degraded slightly from last month as well, with AF-8 showing -129 and BF-6 showing -90 Mdays late to DD-250. Availability of tooling (SDD/LRIP 1 units completing on time) and late part deliveries to various SWBS's continue to be LM Aero concerns. AF-9 moved to EMAS on 8 Sep 09 (baseline was 5 Jun 09). BF-7 and BF-8 Forward Fuselages finished PMM activities in September (baseline dates were June and July, respectively). The AF-9 Forward Fuselage moved to Mate on 8 Sep 09 (a 74 day variance to the baseline date). The current average baseline variance for the Wing moving to Mate is ~2 months. Overall, LRIP 2 is an average of 4.5 months behind to aircraft deliveries as of the end of FY2009.

LRIP 3 – Progress on BF-12, AF-14 and BF-13 Wing build continues. AF-14 and BF-12 [redacted] activities started approximately 1 month late to the baseline, however; BF-13 [redacted] activities stared on-time to the schedule baseline. [redacted] has five LRIP 3 Center Fuselages in-work. GFE deliveries such as Lift Fan assemblies, Roll Post's and Engine's on-dock are initial critical path LRIP 3 concerns.

LRIP Breakdown - DD-250 Performance (M-Days)
2009 CDRLs



	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09
LRIP 1 Average	55	55	5	25	18	37	43	109	113	107	97	118
LRIP 2 Average	25	30	38	51	26	24	13	76	77	75	81	92
LRIP 3 Average											39	6

[redacted]: An optimization program has started at [redacted] and will continue to spread to all SWBS's. There has been a list of lessons learned at each station which should make it easier to encompass the other cost centers in the next few months. The plan for adding 20 additional contractor personnel by 31 Oct 09 is complete. LRIP 2 – AF-11 shipped on 19 Oct 09, one day ahead of schedule. AF-12 is now scheduled to ship 17 Dec 09, and AF-13 is scheduled for 17 Jan 09. LRIP 3 – Risk to schedule for LRIP 3 remains low. [redacted] anticipates parts availability for LRIP 3 will be drastically improved compared with LRIP 1 / LRIP 2, and expects LRIP 3 to be on schedule. [redacted] continues to work [redacted] which are expected to be well controlled for LRIP 3, however; [redacted]

Contractor Actions: Mitigation activities such as the use of overtime, span adjustments, and out of station installations for late parts continues. Program schedule (MS 6.2) is projected for early next year. This will be the sixth schedule revision since Program inception. [redacted] continues to work to mature the LRIP variance process with LM Aero.

DCMA Actions: DCMA LMFW P/SI, [redacted] Production and [redacted] D&I Team members continue to mature performance indicator metrics to assess key build event progress on LRIP aircraft. These metrics utilize data from the IMS and various shop floor systems. DCMA [redacted] is reviewing approved change requests and the [redacted] technical issues database for potential variance conditions. DCMA [redacted] will reconcile this list with [redacted] to ensure all variances have been documented for each LRIP aircraft.

Estimate when metric will achieve goal: LRIP deliveries are projected to be met in LRIP 3, and are largely dependent upon Wing-at-Mate overlap elimination, timely availability of tooling, change integration, part deliveries and alignment of EBOM, MBOM and As-Built data. BF-13 is the pacing aircraft for schedule recovery.

The table below includes the total SCOPs planned for LRIP aircraft, the number of SCOPs completed as of the reporting period (16 Nov 09), the percentage of SCOPs completed relating to the total planned for the specific test article and the percentage of testing completed prior to test article rollout from the factory to the flight line (Rollout).

SCOP testing starts at the trailing end of SWBS 240. The current IMS baseline finish dates for AF-6 through AF-13 are annotated below. New effectivities will be added once planning against those aircraft is formally released.

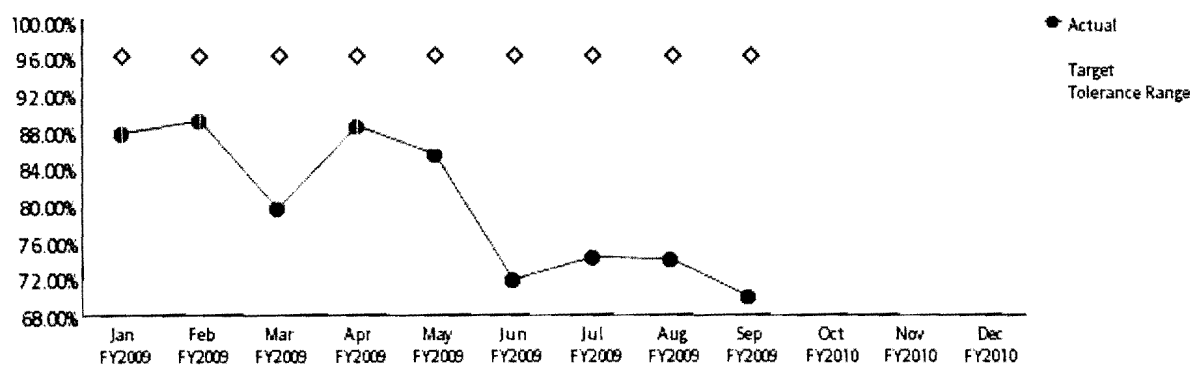
SCOP Completions per Aircraft (A/C)

Aircraft Effectivity	Baseline Finish Date (SWBS 240)	Total SCOPs Planned	Planning Formally Release	SCOP Completed	%Complete (Total A/C)	% Complete prior to Rollout
AF-6	[redacted]	96	40	24	25.00%	[redacted]
AF-7		96	40	14	14.58%	
AF-8		96	40	6	6.25%	24 Nov 09
AF-9		96	40	6	6.25%	4 Jan 10
AF-10		96	39	11	11.46%	1 Feb 10
AF-11		96	27	4	4.17%	1 Mar 10
AF-12		96	27	3	3.13%	29 Mar 10
AF-13		96	23	1	1.04%	26 Apr 10
BF-6		107	7	0	0.0%	24 May 10
BF-7		107	5	0	0.0%	22 Jun 10

Currently 105 SCOPs and 33 AEI's (Aerospace Equipment Instructions) are formally released against CTOL aircraft and 115 SCOP's and 33 AEI's released against STOVL aircraft.

Improve Supplier Delivery Rate

NSF198AJ21: Description: JSF Key Suppliers have an average delivery rating of greater than or equal to 96 percent. JSF Key Suppliers are determined by analyzing category 3 and 4 shortages to jig load. JSF Key Suppliers may be adjusted on a quarterly basis as new issues emerge. This metric is a monthly average percent of lots delivered on-time for JSF Key Suppliers. The goal is to achieve an average of 96 percent or greater on-time lot delivery rate. Supplier delivery data is obtained from LM Aero's Supplier Quality Management and Procurement Quality Network databases. These databases are updated on approximately the 15th of each month. The monthly data from each database is reflective of the previous month's performance. This metric will be updated within one week of the LM Aero database updates. Green: 100.0 to 96.0%, Yellow: 95.9 to 87.0%, Red: ≤86.9%.



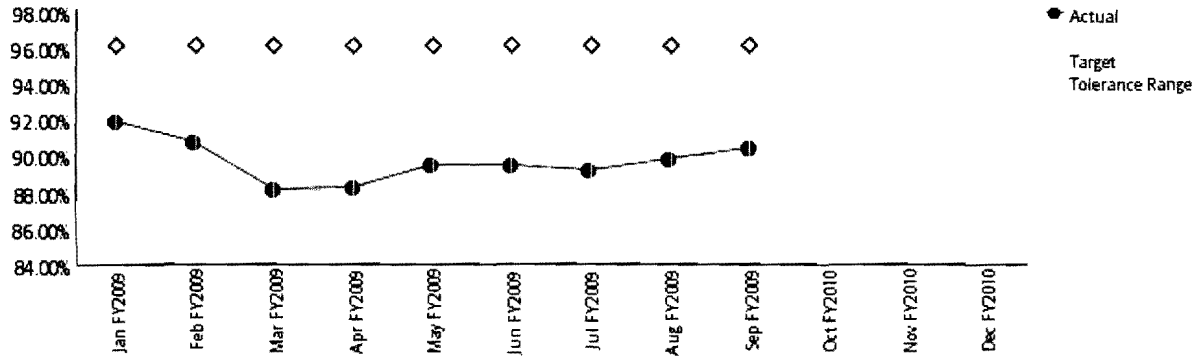
Metric Status: Red

Trend: Declining

Estimate when PC will achieve goal: LRIP 3 to LRIP 4 (2011 to 2013).

Improve Supplier Quality Rate

NSF198AJ10: Description: Each delegated supplier has quality ratings greater than 96 percent. The total LM Aero Quality rating for key suppliers (areas of consideration are: cost, issues, technical, criticality). The top suppliers are summed and divided by quantity which gives an average QA rating per month. The goal is to achieve an average of greater than 96%. Supplier quality data is obtained from LM Aero's Procurement Quality Assurance database and metric updated no later than the 20th of each month. Green: ≥96%, Yellow: 87 to 95%, Red: <87%.

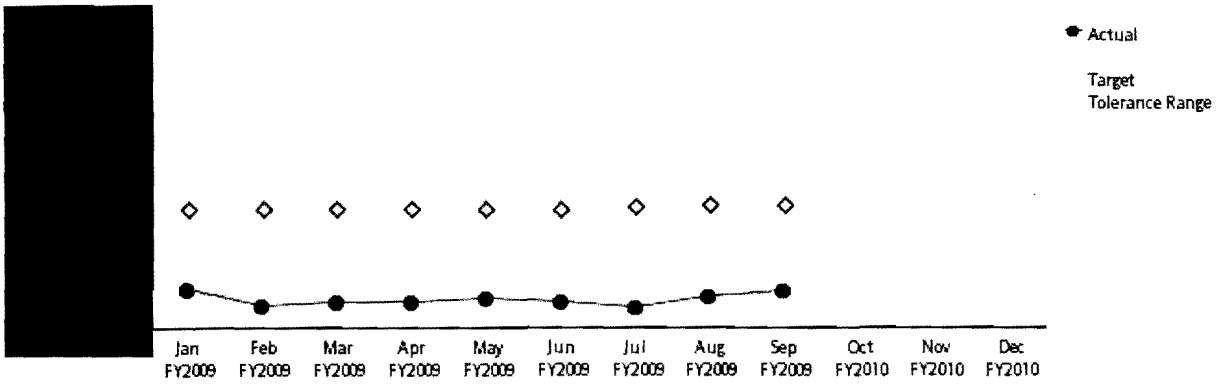


Metric Status: Yellow

Trend: No appreciable change since last report.

Maintain Cost and Schedule

NSF198AJ08: Description: Resource requirements are aligned in support of funding and budget allocations. IEAC data and projections match actual performance within + / - 10% of contractors budget at completion. DCMA Independent EAC is measured against the prime contractor's BAC. DCMA includes risk, pressures, cost and schedule variances as compared to LM Aero BAC. The source of EV data comes from the monthly JSF SDD Cost Performance Report which lags by 1 month. Metric is updated in Metrics Manager as soon as data is received from contractor **(approximately 45-60 days after end-of-month)**. This is represented as the contractor's BAC as the Numerator divided by DCMA's IEAC as the Denominator - with a 10 percent tolerance band. Green: 1.0 to 0.95 variance (5%), Yellow: 0.95 to 0.90 variance (5% to 10%), Red: 0.90 or greater variance (>10%).



Metric Status: Green

Trend: No appreciable trend since last report.

Lockheed Martin is now reporting to an Over Target Baseline of [redacted] reported in the September 2009 Cost Performance Report (CPR). DCMA IEAC is [redacted] for the SDD contract. This DCMA IEAC is based upon the September 2009 CPR report.

LM Aero has expended an average of [redacted] per month over the last six months. Assuming a continuance of this expenditure rate, DCMA projects the existing SDD budget with OTB may be depleted in FY2011, [redacted]

LM Aero has prepared EAC8 Cycle 1 incorporating DCROM base of potential threats and pressures in the July 09 CPR report. The EAC8 has no MR remaining, further straining the financial management of the Program. The EAC8 is under DCMA review to verify that potential suppliers' cost growth, future TCRs, etc., are considered in the DCROM. The LM Aero's EAC8 projected MR is zero and therefore will be unavailable to offset any risks remaining in flight testing and software coding. Without that reserve, and assuming the same efficiencies, the Program is likely to require additional funding for completion of the SDD contract. Preliminary assessment by LM Aero indicates that an additional amount of [redacted] will be required to complete the contract.

Using the Standard formula based on cumulative SPI and CPI (since replan) yields an SDD increase of [redacted] over current LM Aero BAC. With the addition of risk factors such as, Suppliers' cost growth, Late-to-Need parts, Schedule Impacts, Production Delays, etc DCMA's EAC is [redacted] against LM Aero BAC of [redacted] Thus the DCMA's IEAC is [redacted] higher than LM Aero's BAC or [redacted] higher than LM Aero's EAC. The DCMA's IEAC includes the threats and pressures at [redacted] replacement of BF-4 STOVL lift door, repairs and/or replacement of WB Doors and LF Exhaust Doors. The repair/replacement costs have been estimated to be close to [redacted]

The graphs below illustrate the DCMA's past projections of IEAC against LM Aero's BAC and LRE.

[redacted]

The September 2009 SDD/LRIP cost summary and Program status is as follows:

SDD	BAC	LM EAC CPR	DCMA IEAC
Performance Measurement Baseline (PMB)			
Management Reserve (MR)			
Total:			

LRIP 1	BAC	LM EAC CPR	DCMA IEAC
Performance Measurement Baseline (PMB)			
Management Reserve (MR)			
Total:			

LRIP 2	BAC	LM EAC CPR	DCMA IEAC
Performance Measurement Baseline (PMB)			
Management Reserve (MR)			
Total:			

LRIP 3	BAC	LM EAC CPR	DCMA IEAC
Performance Measurement Baseline (PMB)	[redacted]	[redacted]	[redacted]
Management Reserve (MR)	[redacted]	[redacted]	[redacted]
Total:	[redacted]	[redacted]	[redacted]

Budget Baseline and EAC Summaries

Contract Data	KT 1	KT 2	KT 3	KT 4
Contract #	N00019-02-C-3002	N00019-06-C-0291	N00019-07-C-0097	N00019-08-C-0028
Name	JSF SDD	LRIP 1	LRIP 2	LRIP 3
Contract Type	Cost Plus Award Fee	Cost Plus Award Fee	Cost Plus Award Fee	Cost Plus Award Fee
Obligated Amount	[redacted]	[redacted]	[redacted]	[redacted]
ULO	[redacted]	[redacted]	[redacted]	[redacted]
Performance Start/End	Oct 2001/Oct 2014	May 2007/Feb2010	Apr 2010/Feb 2011	Mar 2011/Dec 2011

Primary Trip Wires		Secondary Trip Wires						
System Indicator	Baseline Indicator	Cum BEI	SPI	Cum CPLI	CPI	CPI/TCPI 10%	Contract Mods 10%	Baseline Revs 5%
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	**9.2%**	[redacted]	**N/A**

Primary Trip Wires –

(a) System Indicator: Please see EV section of report.

(b) Baseline Indicators: A baseline assessment shows the contractors SDD BAC and EAC to be optimistic. To complete the contract within the CBB, the contractor needs to be about 9.2 percent more efficient. The BAC has increased by 40% since the start up in Oct of 2001.

Secondary Trip Wires –

- SDD Baseline Execution Index (BEI): Cumulative tasks from October 2001 thru October 2009: Cum BEI = 145,115 Completed Tasks/149,035 Planned Tasks = 0.97
- SDD Monthly (October 2009) Tasks: 403 Completed Tasks vs. 1064 Baselined to Complete Tasks
- SPI (since replan) = BCWP/BCWS= 0.973
- SDD CPLI= (1243 + (158)/1243 = 0.87 (Time Now = 25 Oct 09)
- CPI (since replan) = BCWP/ACWP= 0.951
- CPI/TCPI= 0.951/1.043=.92
- Contracts Mods – (BAC now)/original BAC 10/01= [redacted] =1.40

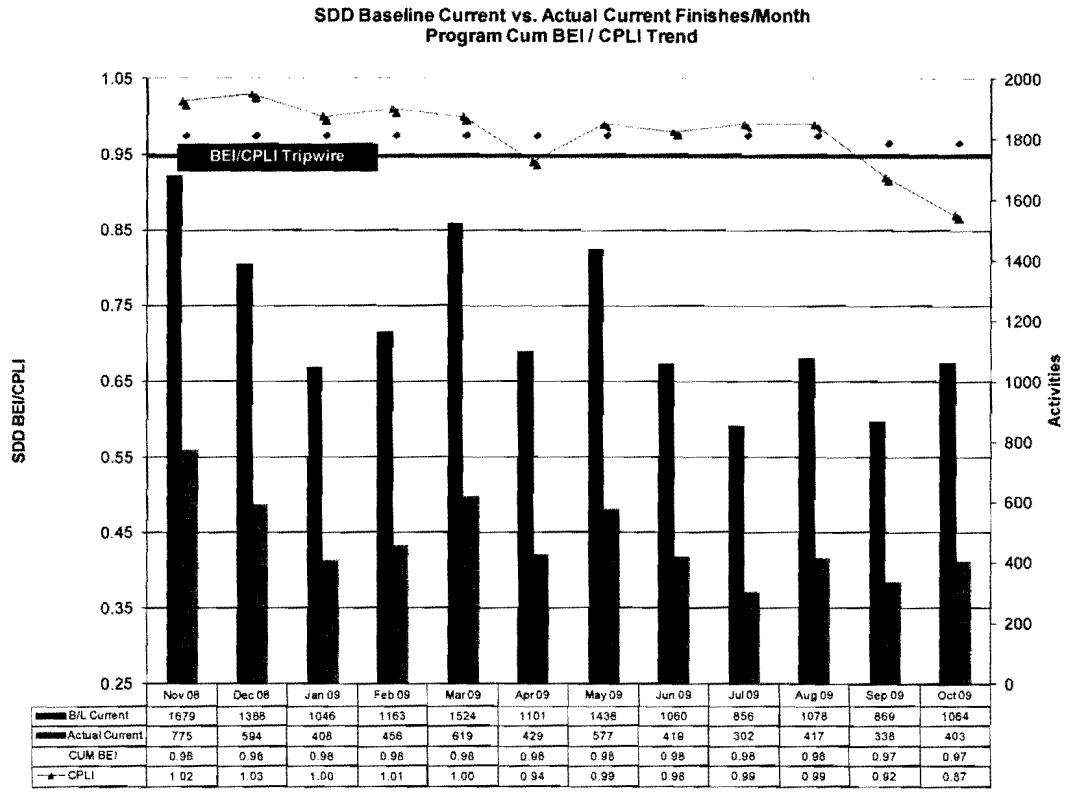
The DCMA Risk Rating for EVMS at the total Program level is rated green, using the parameter of VAC (-5.003%).

Similarly, the $TCPI_{EAC}$ is different, for the DCMA IEAC versus the contractor's EAC:

$TCPI_{DCMA\ IEAC}$ = 0.879
$TCPI_{LM\ EAC}$ = 1.043

NSF198AJ08 Sub-Metrics: Description: The SDD Baseline Execution Index (BEI) metric is an Integrated Master Schedule (IMS) based metric that calculates the efficiency with which actual work has been accomplished when measured against the baseline. The BEI provides insight into the realism of Program cost, resource, and schedule estimates. For BEI, an index of <.95 is used as a warning indication of schedule execution underperformance. Goal is to achieve BEI values≥.95. Cumulative BEI equals actual tasks/activities completed divided by the baseline total tasks/activities.

The SDD Critical Path Length Index (CPLI) indicates whether or not the Program schedule can be completed on time. This is an Integrated Master Schedule (IMS) based metric that utilizes the critical path methodology definition being: the longest, continuous sequence of tasks through the network schedule with the least amount of float, from contract start to contract completion. After contract start, the critical path is always measured from "time now" until contract completion. For CPLI, an index of <.95 is used as a warning indication that the Program will not complete on time. Goal is to maintain CPLI values≥.95. Critical Path Length Index (CPLI) equals the Critical Path Length (CPL) plus or minus the Total Float (TF) divided by the Critical Path Length (CPL). The target efficiency ratio for both metrics is 1.00. An index greater than 1.00 is favorable, and an index less than 1.00 is unfavorable≥.95 = Green .90 to <.95 = Yellow <.90 = Red



	Nov 08	Dec 08	Jan 09	Feb 09	Mar 09	Apr 09	May 09	Jun 09	Jul 09	Aug 09	Sep 09	Oct 09
B/L Current	1679	1388	1046	1163	1524	1101	1438	1060	856	1078	869	1064
Actual Current	775	594	408	456	619	429	577	418	302	417	338	403
CUM BEI	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.97	0.97
CPLI	1.02	1.03	1.00	1.01	1.00	0.94	0.99	0.98	0.99	0.99	0.92	0.87

Cumulative SDD Program BEI is rated Green at 0.97, while Cum CPLI is Red at .87 for month end October 2009. The CPLI value is currently impacted by durability testing and final verification completion on CJ-1 and its dependency on CG-1 activities. Monthly planned finishes versus actual performance continues to average an approximate 40% completion rate. MS 6.1 baseline replan dates were incorporated into the IMS month-end May 2008. Master Schedule 6.2 is currently projected for early CY2010.

Reduce Schedule Variation

NSF198AJ05: Description: Reduce the average Wing touch labor variance "at move to Mate" to within 10% by SDD completion. In addition to monthly performance indicators, linear trend lines are used to project out subsequent Wing builds that have not moved to mate yet – projection is used to access current and predict future Wing variance performance. Metric will be updated NLT the 20th of the following month. Green: <-10% variance, Yellow: -10% and -15% variance, Red: >-15% variance.

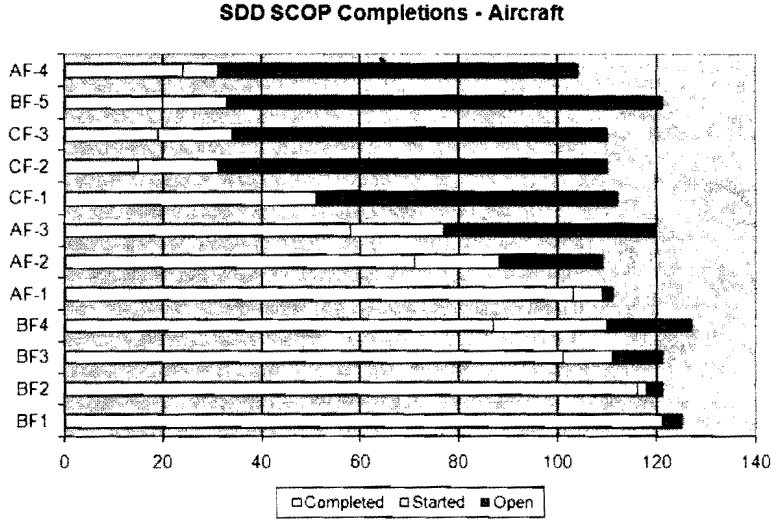
The following table depicts the SCOP completions per test article/aircraft. The table includes the total SCOPs planned per aircraft, the number of SCOPs completed as of this reporting period (2 Nov 09), the percentage of SCOPs completed relating to the total planned for the specific test article and the percentage of testing completed prior to test article rollout from the factory to the Fuel Barn. No aircraft have moved from the factory during this reporting period.

SCOP Completions per Test Article / Aircraft (A/C)

Test Article	Total SCOPs Planned	SCOP Completed	%Complete (Total A/C)	% Complete prior to Rollout
BF-1	125	121	96.80%	28.0% (18 Dec 07)
BF-2	121	116	95.87%	51.6% (16 Aug 08)
BF-3	121	101	83.47%	61.98%(2 July 09)
BF-4	127[2]	87	68.50%	30.8% (21 Jan 09)
AF-1	111	103	92.79%	38.1% (5 Feb 09)
AF-2	109	71	65.14%	65.14%(6 Nov 09)
AF-3	120[1]	58	48.33%	
CF-1	112	40	35.71%	
CF-2	110[1]	15	13.64%	
CF-3	110[1]	19	17.27%	
BF-5	121	20	16.53%	
AF-4	104	24	23.08%	

[1] Newly released SCOPs added to effectivity during this reporting period
[2] SCOPs removed from the effectivity during this reporting period

This chart depicts the current SCOP completion status for all flight test articles in SDD. List is organized by current firing order as depicted in Master Schedule 6.1.



The following table is provided to track Wing specific SCOP testing prior to move to mate and percentage of testing completed prior to test article moving from the Factory Floor to the Fuel Barn.

SCOP Completions on Wing Assemblies

Test Article	Total SCOPs Planned to Date	%Complete (No. SCOPs Completed)	% Complete Prior to Rollout	Avg Days Behind MS 6.1 (for Completed Tests)
BF-1	15	100% (15)	40.0% (6)	-170
BF-2	18	100%(18)	83.3% (15)	-216
BF-3	18	100%(18)	83.3% (15)	-314
BF-4	16	93.8%(15)	42.1% (8)	-256
AF-1	14	100%(14)	68.8% (11)	-217
AF-2	14	100%(14)	100.0% (14)	-272
AF-3	14	100%(14)	-	-281
CF-1	18	77.8%(14)	-	-202
CF-2	17	23.5%(4)	-	-102*
CF-3	18	27.8%(5)	-	-139*
BF-5	18	33.3%(6)	-	-153*
AF-4	17	58%(10)	-	-121*

[1] New wing specific SCOPs added this reporting period

* Wing testing is still in-work. Travel work from [redacted] will be in effect until LRIP 2? Value is not final until all testing is completed.

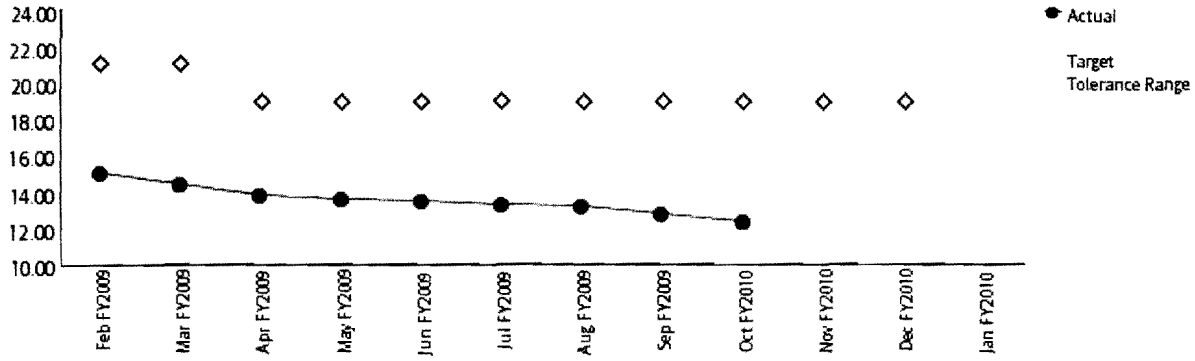
Recently, the Program has begun to status schedule float to frequently revised test focus work plan deadline dates rather than baseline schedule dates. As a result, the previously shown key aircraft tracking to first flight charts have been discontinued. The following performance to schedule variance will replace those charts.

Aircraft	MS 6.1 First Flight Baseline Date	Current IMS Deadline Date	Projected IMS First Flight Date	Actual First Flight	IMS Variance to Baseline (Days)
AA-1	12/11/2006	N/A	N/A	12/15/2006	4
BF-1	05/23/2008	N/A	N/A	06/11/2008	19
BF-2	01/13/2009	N/A	N/A	02/25/2009	32
BF-4	03/24/2009	11/25/2009	01/21/2010		253
BF-3	05/13/2009	10/26/2009	12/08/2009		209
AF-1	05/14/2009	10/24/2009	11/13/2009		153
AF-3	06/02/2009	02/03/2010	03/05/2010		232
AF-2	08/12/2009	02/02/2010	02/04/2010		147
CF-1	10/05/2009	03/16/2010	04/23/2010		169
CF-3	11/02/2009	05/15/2010	06/22/2010		195
BF-5	12/07/2009	05/13/2010	06/01/2010		148
CF-2	12/23/2009	07/10/2010	09/22/2010		229
AF-4	02/01/2010	06/23/2010	07/15/2010		139

Status: 11/08/2009

Non-Conformance Reduction

NSF198AJ06: Description: 10% reduction in MRB discrepancies per year. Metric shows the average number of MR defects per 1000 actual manufacturing hours. The goal is to reduce MR defects per 1000 actual manufacturing hours by 10% per year. Metric is based on contractor provided data that is collected updated in metrics manager NLT the 20th of each month and averaged against all prior months to illustrate normalized trend. Green: <goal of 21, Yellow: within 10% of the goal, Red: >10% above the goal of 21.



[redacted]

Metric Status: Green

Trend: Improving with approximately [redacted]

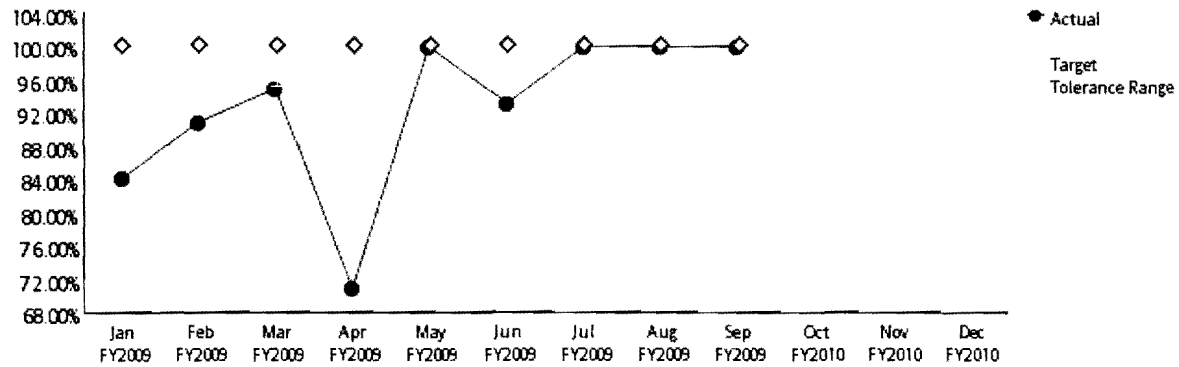
Summary of Metric Status: Metric illustrates improving trend – maintained for the last 12 months.

Contractor Actions: LM Aero has reduced their goal for MR actions for 2009, meeting the goal to date.

DCMA Actions: Reducing the goal to reflect an effort to further reduce the amount of MRB actions for this year. DCMA is evaluating the new contractor goal to see if a more than 10% reduction in MRB actions is warranted.

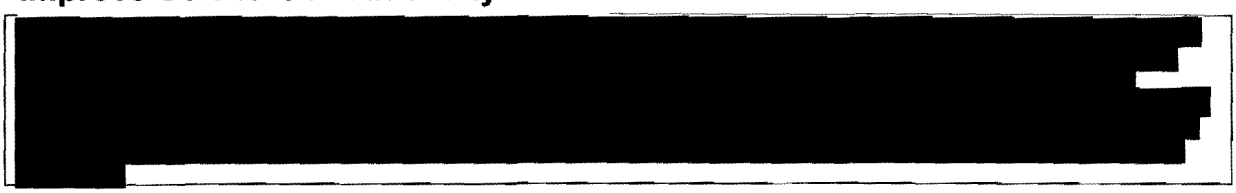
Safety of Flight (SoF)

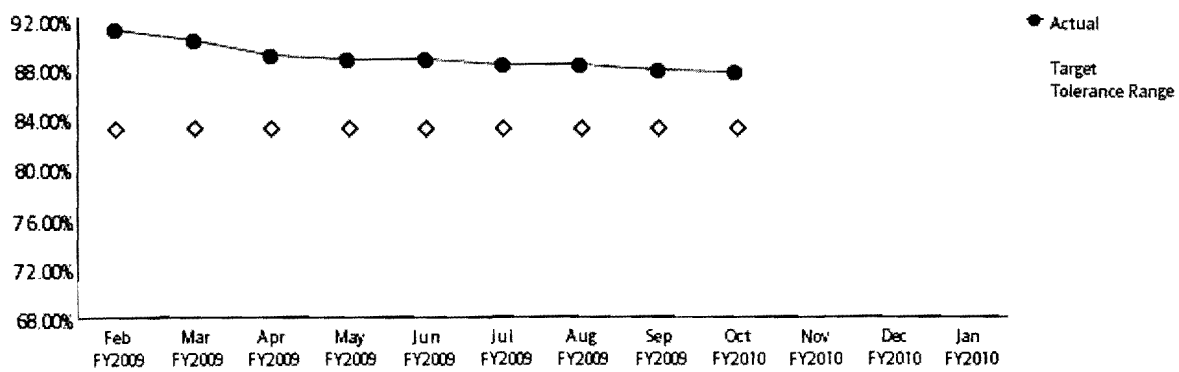
NSF198AJ01: Description: Measures contractor capability to present a successful Safety of Flight inspection on first attempt. It is a measure of quality where the target is 100%. Normally, SOF metrics measure the number of SOF escapes to the customer. We are measuring the contractor's ability to present DCMA SOF inspections capable of passing an inspection or test the first attempt. This allows us to prepare the contractor for SOF expectations once production begins. We will adopt a traditional SOF metric based on customer reported escapes once delivery of aircraft begins. This metric has been re-adjusted as of January 2009 to reflect a more accurate account of what is being presented to DCMA. The contractor's processes are not mature enough (currently SDD) to present to DCMA for passable SOF inspections on the first attempt. Data is updated in Metrics Manager NLT the 20th of the following month. Performance data obtained from local DCMA quality data base as a result of DCMA inspections. Green: 100%, Yellow: 95%-99.9%, Red: <94.9%.



Metric Status: Green

Improve Software Productivity





Trend: No appreciable trend since last report.

Summary of Metric Status: Current performance is exceeding our target of 83%. The value this month is 87.70 which is a small negative change over last month's value of 88.27%.

Root Causes: DCMA LMFW performed a risk assessment for this revised PC. Process areas of focus include Software Product Evaluation (SPE) and Interface Work Package (IWP) processes. Another focus area is improved communication through consistent use of developmental software configuration management practices.

Contractor Actions: The contractor's process includes process improvement activities (Kaizans, Tiger Team Efforts, Value Stream Mapping, Lean Events, etc).

DCMA Actions: DCMA has participated in the initial stages of a Joint Process Review (JPR). Team members were chosen and DCMA held meetings with the contractor on their "Process Improvement Practice" as the subject matter for the JPR. The joint process review was postponed until further notice as it was overcome by F-35 stand down events that took precedence. Focus has shifted to an internal review on the causes and the events leading up to the stand down.
DCMA [redacted] Prognostics and Health Management (PHM) Requirements [redacted] – Requirements] – Block 1.0 requirements with all updates are still being worked to close out TCR conversion. [redacted] is still working on the final comments on one remaining system pending signature. [redacted]

DCMA [redacted] Prognostics and Health Management (PHM) Software [redacted] – Software] – Cross correlation has been made the top priority for Block 1.0 tasks. Many key POC's in the [redacted] MS group attended a S/W Working Group meeting at the Fort Worth location. DCMA will receive and analyze the results of this meeting which are anticipated to be posted on the JDL. Software delivered includes: Block 0.5 FTU SI&T – Delivered 10/15 and Block 1.0 initial releases for TCB and Basic Objects.

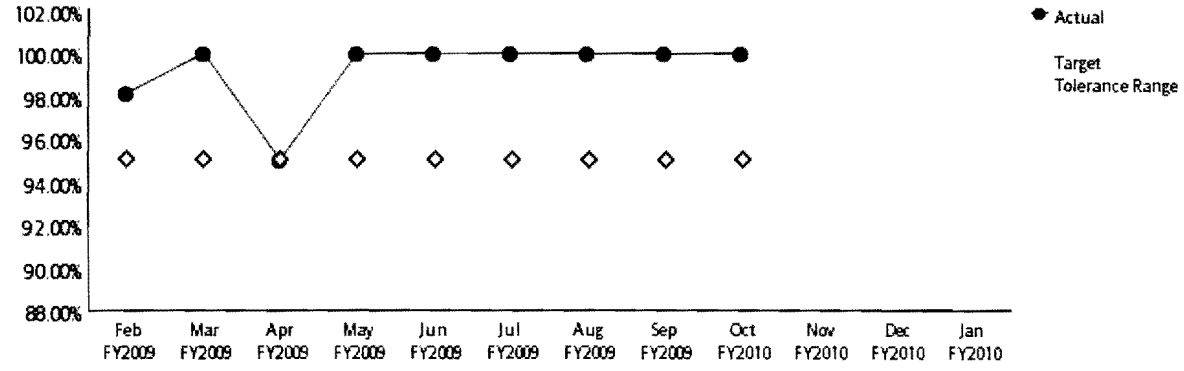
DCMA [redacted] – [redacted] – External Communications Domain] – Block 2.0 FTU-C is 34% complete. The GWDE (Generic Write-down Engine) Design was deemed a "certifiable" approach at the Crystal City TIM.

DCMA [redacted] – Mission Domain] – Design changes to the data collection file structure are being driven by OMS (Offboard Mission Support) and will result in significant rework of the DCA requirements, interfaces and code. Some reassignment of tasking has taken place to meet schedule constraints. DCMA has conducted a study of [redacted] SQARs with a focus on determining trends in the quality of SQARs and the amount of time it takes to complete a typical one. The complexity/ difficulty of each SQAR was not considered in that analysis. Consequently, DCMA has reservations about the predictive analysis of its findings. DCMA has also conducted an independent assessment of the Software Quality Assurance group and the [redacted] Software Configuration Status Accounting aspects of the Configuration Management process. At the conclusion of the assessment/audit DCMA determined that except for a need of some nominal command media documentation changes, the process was effective and appropriate (receiving three "green" ratings for documentation, implementation and overall qualitative evaluation). DCMA did however note a need for some further investigation into the reasons why SPAR data was not being directly reported into SIMS for a particular [redacted] domain.

Estimate when PC will achieve goal: Current performance exceeds target. As Block 1.0 software development transitions to developmental and system integration testing more escapes will be discovered and the DPC will likely continue a downward trend. A current estimate of [redacted] development percent complete using BCWP/BAC is 85.5%. Based on the slope of the current trend line, the DPC is likely to stay above 83% when development is 98% completed. A positive observation would be the software product evaluations, and defect prevention actions have been effective in removing defects early so the downward trend occurs more slowly.

Improve Minor Variance

NSF198AJ19: Description: Maintain at least a 95% correct classification rate of variances. Cumulative number of minor variances classified correctly divided by the cumulative number of minor variances reviewed. Metric should be updated at the end of each month but no later than the twentieth of the following month. Green: % of properly classified minor variances is ≥95%, Yellow: 90% up to but not including 95%, Red: <90%.



Metric Status: Green

Trend: No Change

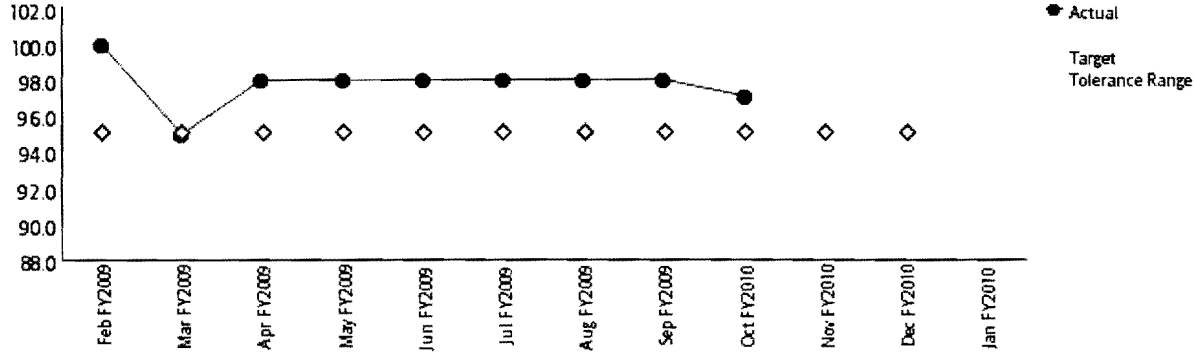
Summary of Metric Status: The contractor had a correct classification rate of 100% this month.

Root Causes: No root causes identified at this time.

Contractor Actions: No contractor actions required at this time.
DCMA Actions: None at this time other than to continue to review Minor Variances for correct classifications. Ensure the contractor takes the necessary corrective actions to preclude any incorrect classifications in the future.

Improve FCA/PCA

NSF198AJ20: Description: Ensure that at least 95% of systems reviewed in interim FCA/PCAs meet the design requirements. Technical Description: Verification of the F-35's physical configuration to the design requirements by performing PCAs (physical configuration audits). Percentage of part and assembly numbers reviewed in interim audits in accordance with engineering drawings divided by total population of parts and assemblies assessed. The data used to assess this comes from interim audits from suppliers. Green: % of parts meeting design requirements is ≥95%, Yellow: 90-94%, Red: <90%.



Metric Status: Green

Trend: Slight degradation from earlier months.

Contractor Actions: LMFW conducted a HOTAS (Hands on Throttle and Stick Grips) FCA PCA on 27-29 Oct 09 that was postponed from 13-15 Oct. This occurred at [redacted] The design and manufacture of the Stick and Throttle Grip assemblies is performed by [redacted] An end item Envelope Drawing [redacted] revision E for the Stick Grip and [redacted], revision H for the Throttle Grip was provided by [redacted]

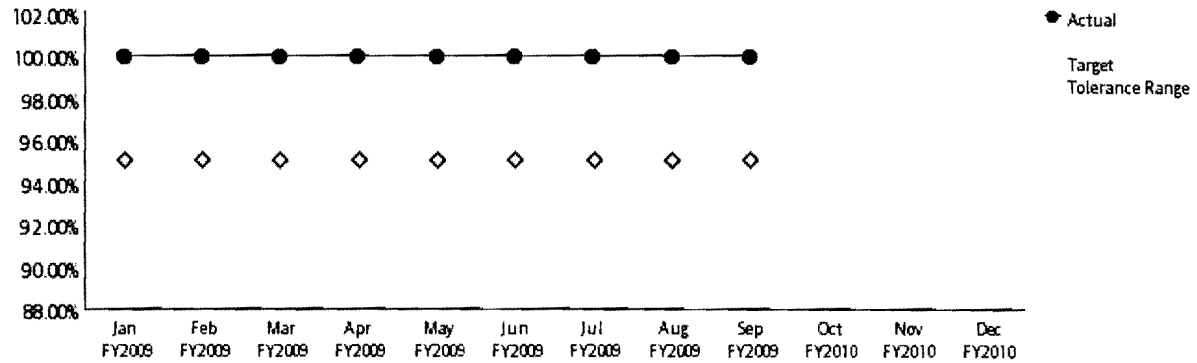
The FCA/PCA/FAI focused on the PBS's, and the hardware part numbers listed above. It was determined during the audit that the latest revision of each PBS was not officially on contract with the supplier. However the latest revision of each specification was in agreement between [redacted] and LM Aero for conducting the audit activity. A VCRM each for the Stick Grip and the Throttle Grip were reviewed during the audit. The Audit Team used the VCRM's to walk through all SHALL requirements, 112 SHALLS for the Stick and 109 SHALLS for the Throttle incorporating updates real time. All verification evidence documented on the VCRM was reviewed during the course of the Audit.

LM Aero Quality audited the AS9102 FAI data for the Throttle and Stick Grips. LM Aero picked the stick as the audit sample. During the course of the audit LM Aero reviewed thirty-one samples of data for accuracy and dimensional tolerance adherence. All audit samples were found to be acceptable. The FAI was performed by [redacted] some time ago and all results were reviewed and accepted by LM Supplier Quality. This audit was another look at the same data. The outcome of the audit resulted in a total of 16 documented action items (6 critical and 10 noncritical). The critical actions have to do with additional information to satisfy verification requirements and approval of changes to the PBS. Completion of the critical action items is a prerequisite to Configuration Management signing the FCA completion certification.

DCMA Actions: Review of contractor processes and reports.

Improve Minor Change

PC – NSF198AJ18: Description: Ensure that 95% of minor changes are correctly classified. A Minor Change is defined as a change to an item which remains interchangeable with the same item in which the change has not been incorporated (form/fit /function interchangeable), has little or no impact to any downstream functions and has no effect on any criteria governing Major A and/or Major B type changes. Criteria for classification of changes are presented in PD-44. Data Source(s): PDM, JDL and weekly CIB meetings participation. Metric is calculated by the number of minor changes correctly classified ÷ by the total number of minor changes reviewed during the month. Data is updated in Metrics Manager NLT the 20th of the following month. Green: >95%, Yellow: ≥90% to ≤95%, Red: <90%.

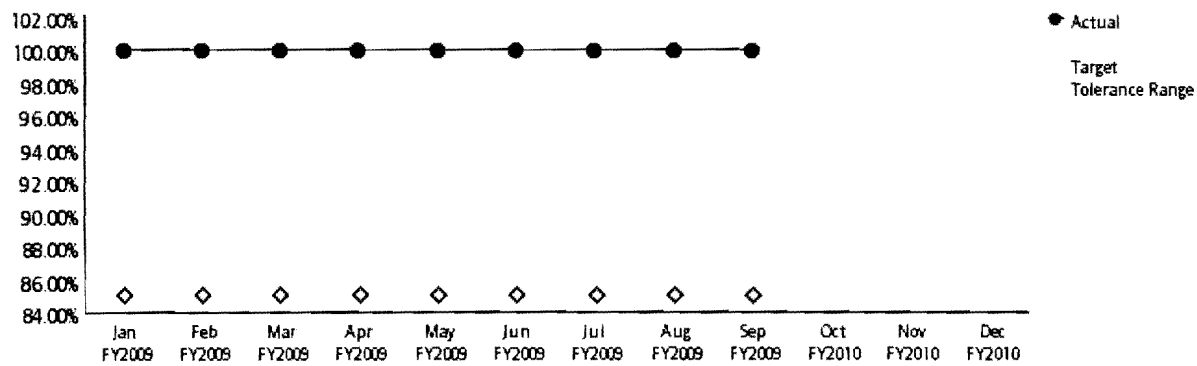


Metric Status: Green

Trend: No Change

Maintain Assist Audit Request Timing

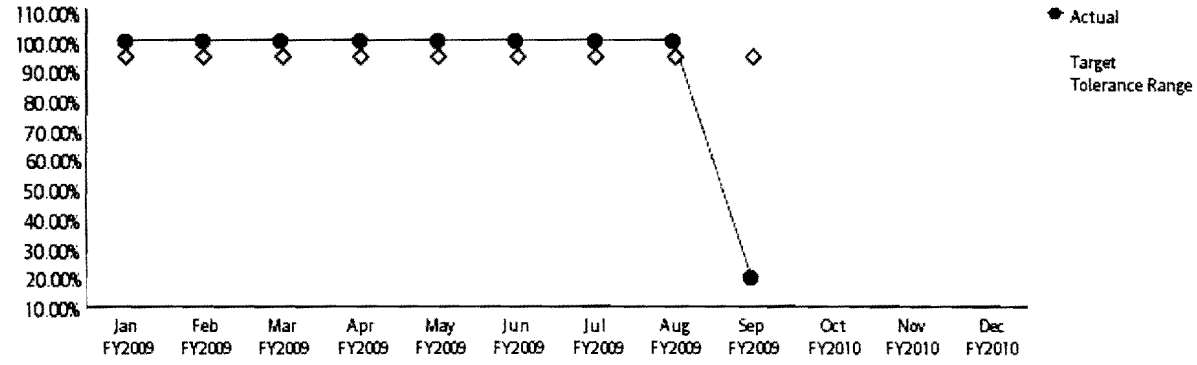
NSF198AJ13: Description: Process contractor/PCO requests for domestic/international Assist Audits within 2 business days 85% of the time. The percentage will be calculated by dividing the number of Assist Audits processed within 2 business days by the total number of Assist Audits requested. Source data will be obtained prior to the 15th of the following month and updated in Metrics Manager NLT the 20th of the following month. Green: >84%, Yellow: 75-84%, Red: <75%.



Metric Status: Green

Maintain FAR Requests for Contract Closeout

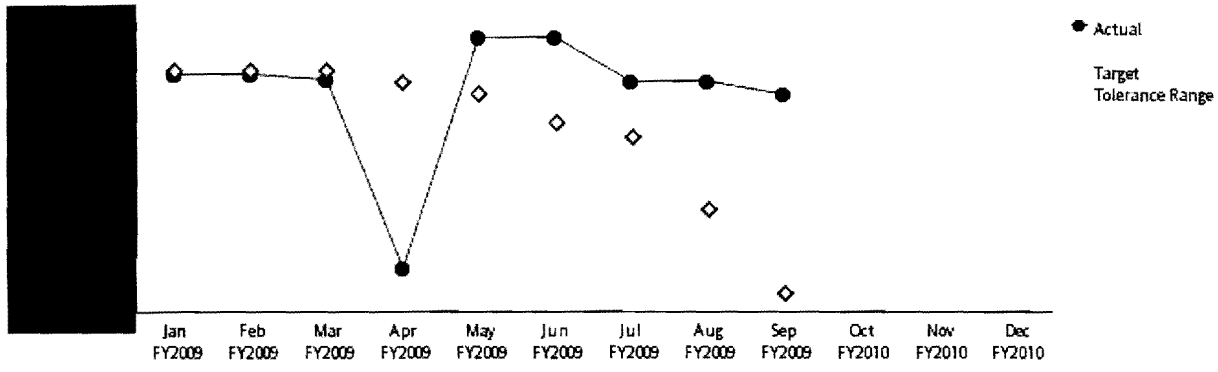
CDDAGYOC02: Description: Maintain 94% contract closeout actions within the Federal Acquisition Regulation (FAR) mandated timeframes. The percentage will be calculated by dividing the number of on time contracts closed by the total number of contracts closed. Source data will be obtained prior to the 15th of the following month, and updated in Metrics Manager NLT 20th of the following month. Green: >93%, Yellow: 85-93%, Red: <85%.



Metric Status: Red

Reduce Cancelling Funds

CDDAGYOC01: Description: 90% of canceling funds will be billed and/or de-obligated before the end of the fiscal year. Attainment of the goal will be calculated by dividing the total dollar amount of canceling funds billed and/or de-obligated by the total amount of canceling funds identified. Source data will be obtained prior to the 15th of the following month, and updated in Metrics Manager NLT the 20th of the following month. Green: >89%, Yellow: 80-89%, Red: <80% of the funds identified to cancel at year end.



Metric Status: Red

Trend: No Change

Root Causes: LM Aero records and MOCAS inconsistent.

[redacted]

Appendix A – EV Assessment Criteria

Rating Criteria is based on the DCMA VAC% and when possible should include MR in the DCMA IEAC

Green - VAC%>-5%

Yellow - -10%<VAC%<-5%

[redacted] - VAC%<-10%

N/R - Not Rated or Not Reported