

**NCSX Work Approval Form (WAF)**

**WBS Number: 823**  
**WBS Title: Design Integration**  
**Job Number: 8203**  
**Job Title: Design Integration**  
**Job Manager: Tom Brown**

**Description:**

Responsibilities include:

- Configuration development and integration support for all design and construction activities. Participating in design reviews.
- Administering the CAD database of project models and drawings. Reviewing and promoting CAD models and drawings. Establishing Intranet procedures and privileges.
- Providing support to the metrology and dimensional control efforts by analyzing metrology data in conjunction with CAD models of the parts and assemblies

**Schedule:** See Attachment

**Approvals:**

_____	_____
Job Manager	Date
_____	_____
Responsible Line Manager	Date
_____	_____
Project Manager	Date
_____	_____
Engineering Department Head	Date

## NCSX June 2007 ETC

### TABLE I - Design Labor

**WBS Number: 823**  
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**Job Manager: Tom Brown**

Job	WBS	Function	Resource Requirements	Basis of Estimate
8203	Design Integration (Brown)			
	823	Design Integration		
		Configuration development and integration support	1020 hours for Brown 2700 hours for a designer 340 hours for Ellis through 1st Plasma	This effort is consistent with the necessary configuration development and integration support for all design and construction activities. The design support covers design activities to update drawings per shop generated mark-ups.
		CAD administration	20% LOE for Brown 10% LOE for Ellis through 1st Plasma	This LOE is consistent with project experiences associated with the drawing review/Intralink administration process and appropriate through 1st Plasma.
		Metrology and dimensional control support	1700 hours for Brown 340 hours for Ellis through final assembly	This LOE is consistent with project experiences associated with the review of MC, VV, and diagnostic loop geometry for position definition and fit-up conditions.

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**TABLE II - Materials and Subcontracts**

<b>Description:</b>	None					

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**TABLE III - Fabrication and Assembly**

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<b>Fabrication and Assembly</b>	None								

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**TABLE IV - Uncertainty of Estimate and Residual Risk Assessment**

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**Uncertainty of the Estimate**

	<u>High</u>	<u>Medium</u>	<u>Low</u>	<u>Uncertainty Range (%)</u>	<u>Comments/Other Considerations</u>
Design Maturity		X			
Design Complexity		X		-15%/+25%	

**Note: High/Medium/Low uncertainty assessment from Job Manager. Uncertainty range based on AACEI recommended practice 18R-97 as amended for NCSX.**

**Residual Impacts**

Job	Risk Description	Likelihood of Occurring	Mitigation Plan	Basis of estimate	Cost Impact		Schedule Impact	
					Low	High	Low	High
8203	Loss or prolonged unavailability of certain key personnel (Brown) from the project could substantially impact the schedule.	VU	Bob Ellis has been budgeted along with a designer to provide support to Tom Brown in Design Integration during peak demands and pick up the slack for Brown if he became unavailable.	Estimated impact is <0.5 months on the critical path. No impact on FPA cost because impacted personnel would be assigned to other activities.	+\$0	+\$0	+ 0.00	+ 0.50

**Notes:**

- [1] Low cost and schedule impacts are considered the minimum (0-percentile) impacts should the event occur. High cost and schedule impacts are considered the maximum (100-percentile) impacts should the event occur
- [2] Cost impacts should be entered as loaded costs  
Cost impacts should NOT include standing army costs which are separately calculated from the schedule impact
- [3] The schedule impacts should be entered as the min and max impacts on the critical path.  
If there is no critical path impact then the schedule entries should be zero.
- [4] Likelihood of occurrence should be entered consistent with our risk classification methodology, i.e.  
VL= Very Likely (P>80%), L=Likely (80%>P>40%), U=Unlikely (40%>P>10%), VU=Very Unlikely (P<10%), NC=Non-credible (P<1%)

Activity ID	MILE-stones (level 2 & 3)	Activity Description	Duration (work days)	Baseline Start	Baseline Finish	Shifts	Total Float	% cmlpt	Proposed Budgeted							
										FY07	FY08	FY09	FY10	FY11	FY12	
<b>Job: 8203 - Design Integration-BROWN</b>																
8203FY07		Design Integration ,& metro support	933*	01MAY07*	01FEB11		422	LOE	980,642.23	brown=2720hrs; Ellis=6 Morris=2700						
8203FY08		CAD Support (SA LOE)	933*	01MAY07*	01FEB11		422	LOE	426,974.76	Brown =20% loe; Ellis						
Subtotal			933	01MAY07	01FEB11		422	LOE	1,407,616.99							