

Electronic Facilitation of Integrated Cost Management for Projects

by

David R. Graham

(NASA PA&E/CAD Cost Research Project)

for

PM Challenge 08
Daytona Beach, FL
Feb 26-27, 2008



Purpose of Presentation

Explain and illustrate the use of an Electronic Network Environment (ENE) application for facilitating project integrated cost management utilizing electronic interfacing and transmission of EVM Contract Performance Report (CPR) and Cost Analysis Data Requirement (CADRe) information to improve cost estimates for enhanced project management



Why Develop an ENE?

- Wanted to develop the implementation of a CADRe & EVM/CPR application for projects:
 - That made CPR's more easily available to PM's from contractors electronically
 - That minimized project office manual preparation of CADRe information
 - That facilitated electronic transmission of CPR actual cost data into CADRe Part C (LCCE)
 - That facilitated communication between personnel involved with *Integrated Cost Management* activities



Integrated Cost Management

(Draft NPR 8000.4B)

- Focus is Category I & II space flight programs and projects
- Objective: Continuously determine the rolled-up risk impact on the cost of the program/project by organizing, obtaining and using cost-risk information
 - Stakeholder interest in integrated cost-risk was codified in June and July 2006
 - Circular A-11, Part 7 and the Supplement to Part 7 (Capital Planning Guide)
 - Update of the FAR (FAR Case 2004-019)
 - These updates require the creation and management of risk adjusted budgets
 - This supplemented GAO interest in better NASA cost-risk management as documented in the May 2004 GAO report on NASA cost estimating



Integrated Cost Management at NASA

- Integrated cost management integrates
 - NASA Continuous Risk Management (CRM)
 - Cost estimating
 - Cost-risk assessment/analysis
 - Utilizing the identified risks in the project risk list and top-down WBS-based uncertainty analysis
 - EVM
 - Procurement
 - Cost data collection
 - Cost data analysis

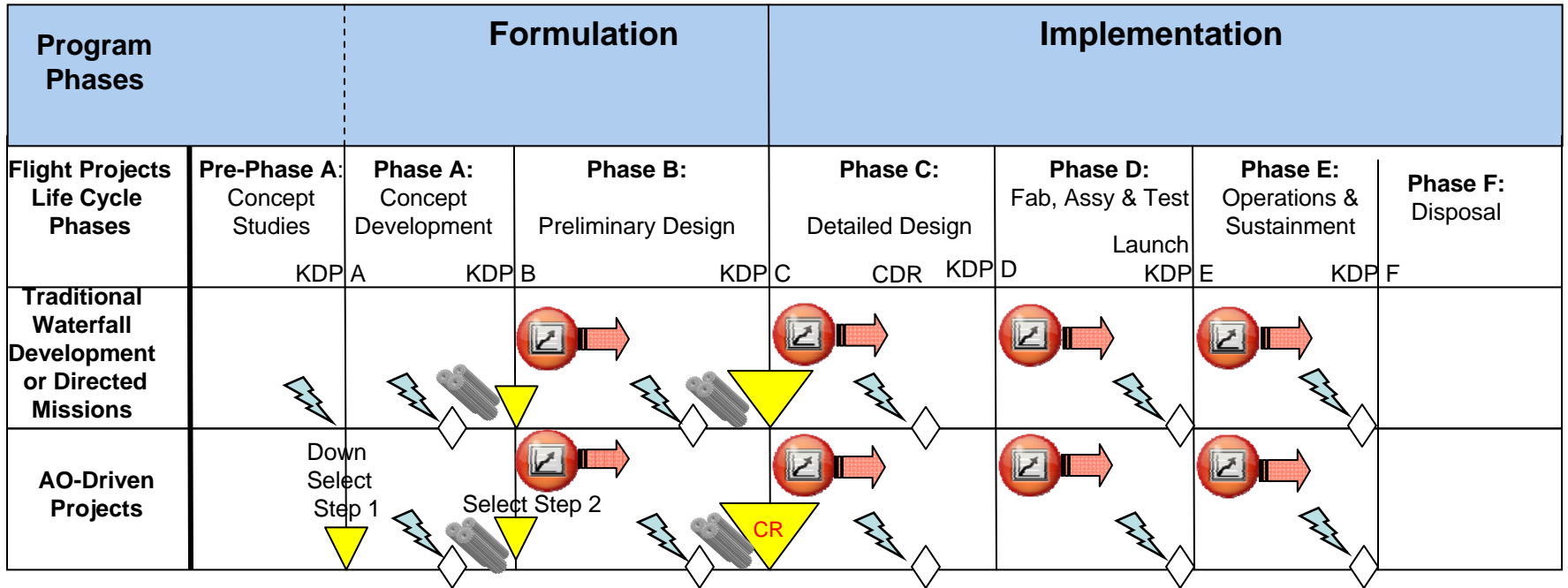


Integrated Cost Management at NASA

- Three activities make up integrated cost-risk:
 - Identify and Quantify Cost-Risk
 - Identify and assess risk
 - Translate risk assessment into cost impact
 - Perform “S”-curve and CRM scenario-based cost-risk
 - Incorporate CRM scenario-based and “S”-curve cost-risk in CADRe (Part C) Life Cycle Cost Estimate (LCCE)
 - Establish Cost-Risk Reporting
 - Develop RFP CADRe & EVM Data Requirements Description (DRD’s) and equivalent project plan requirements
 - Evaluate proposals/project plans addressing EVM and CADRe DRD’s
 - Do Integrated Baseline Review
 - Manage Cost-Risk Using Reported Data
 - Do EVM performance measurement & CADRe “S”-curve analysis
 - Compile end-of-contract cost-risk data for database updates, data evaluation and analysis and cost-risk algorithm updates



When Integrated Cost Management is Required

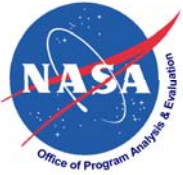


Legend

- Id & Quantify Cost-Risk
- Establish Cost-Risk Reporting
- Manage Cost-Risks Using Reported Data
- CADRe's
- GPMC Mission Decision Review/ICR



Electronic Network Environment (ENE) Facilitation of Integrated Cost Management



ENE Vision

A computing environment that enables computer users with little or no computer technical knowledge to do what they want on the computer without technical support



ENE Paradigm

User Activities

- Create Screens/Fields
 - Anything that can be entered on a Paper Page
 - Also audio and video files
- Connect Fields
- Use Fields

Results Expected

- Data Structure Created, Maintained, Optimized Automatically (i.e., evolves naturally)
- Screens Automatically Web Compliant
- Automatic Analytical Collaboration
 - Real-time, on-line updates
 - Updates even if not on-line
 - Proprietary data USED but NOT seen
- User Environment Totally Dynamic, Totally Integrated



ENE Benefits

- Development by Users Who Need Not be Technical

Who Can

- Deploy in a Fraction of Typical Time

With

- Collaboration that Meets Security, Analytical, and Timing Demands



Implementing Integrated Cost Management with ENE

ENE Prototype Screenshots

- A1- Program Cover Page
- A1A - Mission Objective
- A2- Ref List Page
- A3- CADRe -Textual
- A4- CADRe - Graphics
- Sect. B - Technical Data
- Sect. C - Cost Data
- Sect. D - Risk Allocation
- Sect. D2 - S Curves
- Sect. E - EVMS
- A. Data Combined Table #2
- CPR_Common Header Info
- CPR_Format 1
- D03. WBS Data by ContNo
- Data from EVMS System
- e. Compare CADRe to EVMS
- e. Data Combined Table - test 1
- EVMS Data by WBS
- System Folder

Stock

Specials

System

Cost Analysis Data Requirement Mission/Objective

Program:

Milestone:

Mission: **CADRe (Part A)**

CADRe template available at
www.ceh.nasa.gov

Concept of Operations (CONOPS)

Program

Milestone

Payload

CADRe (Part A)

Application: **Type:** **Design Life:** **Reliability:**

MTBF: **Method of MTBF:** **# of Bands:** **# of Channels:**

Peak Data Rate: **Duty Cycle:**

Payload Descriptor

The payload has application of from the type of .

This payload's design life is scheduled for months with a reliability of and MTBF of .

Textual Description of Payload Package

Program:

SSPS - Space Solar Power Satellite

Milestone

2. PDR (Preliminary Design Review)

Organization Data

CADRe (Part A)

CSCI Name - Payload Software	Version or Release	Name of Developing Org	CMMI of Developing Organiz.	Type of Software Development Method

Aero-SC Software	Version or Release	Name of Developing Org	CMMI of Developing Organiz.	Type of Software Development Method

Application Data

General Project Level Information

Report As Of Date

Program:

CADRe (Part A)

Milestone

Human Rated	Destination	Type of Craft	Mission Life	Approv to Proceed Date	Launch Date
No	Lagrange Point	Fly-By	20	Jan-04	Sep-15
Percent New Design	Num of Contractors	Num Gov Organizations	Orbital Perigee	Orbital Apogee	Apogee Class
95	2	1	35786	35786	GEO
Inclination	Average Payload Power	Peak Payload Power	GN&C Method	Pointing Accuracy	Pointing Knowledge
0	658	823	3-axis stabilized-RW	600	300
Slew Rate	Slew Acceleration	Data Storage	Dry Mass	Number of Systems	Downlink Mode
0.001	0.01	400	187648	9	Ka, S
Downlink Data Rate	Uplink Mode	Uplink Data Rate	Thermal Control		
100(Ka), 2.186(S Band)	S Band	4	250		

(Inputs for PM, SE, SMA & S/T)

	Average Number of Gov Personnel Planned/yr during Phase A	Average Number of Gov Personnel Planned/yr during Phase B	Average Number of Gov Personnel Planned/yr during Phase C	Average Number of Gov Personnel Planned/yr during Phase D
Project Management	75	150	400	400
Systems Engineering	150	150	250	100
Safety and Mission Assurance	25	25	45	20
Science/Technology	50	50	25	15

2 - Payload Page Input

Program: SSPS - Space Solar Power Satellite

Milestone: 2. PDR (Preliminary Design Review)

CADRe (Part B)

Technical parameters:

WBS	WBS Description	Mass CBE kg	Mass CB...	Dims(M)	% New ...	Qty Flight	Qty Test
1.5.	Payloads						
+ 1.5.1.	Transmit Payload	303610	333971				
+ 1.5.2.	Receive Payload	74874	82361				
1.6.	Spacecraft						
1.6.1.	SC Project Management						
1.6.2.	SC Systems Integration; Asse...						
1.6.2.1.	SC Systems Integration; Asse...						
1.6.2.1.1.	SC Systems Integration; Asse...						
1.6.2.1.1.1.	!Laser Generator Vibration and ...						
1.6.3.	Spacecraft/Orbiter						
1.6.3.1.	SC-Orbiter Structures and Mech...	110000	121000		50	1	0
+ 1.6.3.2.	S/C -Orbiter Thermal Control S...	27500	30250		60	1	0

Additional Technical Parameters:

WBS	WBS Description	TP1 Name	TP1 ...	TP2 Name	TP2 V...	TP3 Name	TP3 ...
+ 1.5.1.	Transmit Payload						
+ 1.5.2.	Receive Payload						
1.6.	Spacecraft						
1.6.1.	SC Project Management						
+ 1.6.2.	SC Systems Integration; Assembly; ...						
1.6.3.	Spacecraft/Orbiter						
1.6.3.1.	SC-Orbiter Structures and Mechanis...	Complexity	4	Inheritance	3	F/U Compl...	5
+ 1.6.3.2.	S/C -Orbiter Thermal Control Subsys...	Complexity	5	Inheritance	3	F/U Compl...	6
1.6.3.3.	SC-Orbiter Electrical Power and Dist...	Complexity	4	Inheritance	2.5	F/U Compl...	5
1.6.3.4.	SC-Orbiter Guidance; Navigation an...	Complexity	5	Inheritance	4	F/U Compl...	6
+ 1.6.3.5.	SC-Orbiter Propulsion Subsystem	Complexity	6	Inheritance	4	F/U Compl...	7
1.6.3.6.	SC-Orbiter Communications; Comm...	Complexity	3	Inheritance	2	F/U Compl...	4

Comments:

- A3- CADRe -Textual
- A4- CADRe - Graphics
- Sect. B - Technical Data
 - B - 00 Payload Page Input
 - B - 01 Payload Combined Listing #1
 - B - 01 Payload Combined Listing #2
 - B - 01 Payload Combined Listing #3 - Filtered
 - B - 01 Payload Combined Listing #3 UnFiltered
 - B - 02.1 All Cost per Kg by Prog, Milestone
 - B - 02.1 Cost per Kg by Milestone, Prog
 - B - 02.1 Cost per Kg by Prog, Milestone
 - B - 02.2 Payload Mass CBE + Cont
 - B - 02.3 Mass by WBS
 - B - 02.4 Mass by Prog and Milestone
 - B - 10 Hardware Parameters Input
 - B - 20 CSCI Software Input
 - B - 21 Software Metrics
 - B - 22 Software Metrics
- Data CVS Output Docking Page
- Sect. C - Cost Data
 - C 01 - Cost by WBS x FY
 - C 01b - Cost by Prog and Milestone
 - C 02 - Import of Cost Data
 - C 02b - Import of Cost Data Temp
 - C 03 - Cost Data Import ODBC Stream
 - C - Cost Input Main
 - C - Cost Report By Milestone
 - C - Cost Rpt By Proj
 - C - Cost Rpt By WBS Lev 1
 - C - Definitions
 - C1 - Inp Det.Cost Total Prog NR R
- Sect. D - Risk Allocation
- Sect. D2 - S Curves
- Sect. E - EVMS
 - A. Data Combined Table #2
 - CPR - Common Header Info

Specials

System

Type:

Table:

Page:

Columns:

Name	Type	Precision	Length	Field	Format
Project	VARCH	255	510	F119	
Milestone	VARCH	255	510	F120	
WBS Name	VARCH	255	510	F121	
WBS Desc	VARCH	255	510	F122	
Use4eac	VARCH	255	510	F123	
Total	CURR	19	21	F124	
F7	CURR	19	21	F125	
F8	CURR	19	21	F126	
F9	CURR	19	21	F127	
F10	CURR	19	21	F128	
F11	CURR	19	21	F129	
F12	CURR	19	21	F130	
F13	CURR	19	21	F131	
F14	CURR	19	21	F132	

Where:

OrderBy:

or, update every minutes.

Status:

Cost Data Import ODBC Stream

Cost Data Import ODBC Stream

CostData ImportODBC Stream

Page:

- A1- Program Cover Page
- A1A - Mission Objective
- A2- Ref List Page
- A3- CADRe -Textual
- A4- CADRe - Graphics
- Sect. B - Technical Data
 - B - 00 Payload Page Input
 - B - 01 Payload Combined Listing #1
 - B - 01 Payload Combined Listing #2
 - B - 01 Payload Combined Listing #3 - Filtered
 - B - 01 Payload Combined Listing #3 UnFiltered
 - B - 02.1 All Cost per Kg by Prog, Milestone
 - B - 02.1 Cost per Kg by Milestone, Prog
 - B - 02.1 Cost per Kg by Prog, Milestone
 - B - 02.2 Payload Mass CBE + Cont
 - B - 02.3 Mass by WBS
 - B - 02.4 Mass by Prog and Milestone
 - B - 10 Hardware Parameters Input
 - B - 20 CSCI Software Input
 - B - 21 Software Metrics
 - B - 22 Software Metrics
 - Data CVS Output Docking Page
- Sect. C - Cost Data
- Sect. D - Risk Allocation
- Sect. D2 - S Curves
- Sect. E - EVMS
 - A. Data Combined Table #2
 - CPR_Common Header Info
 - CPR_Format 1
 - D03. WBS Data by ContNo
 - Data from EVMS System
 - e. Compare CADRe to EVMS
 - e. Data Combined Table - test 1
 - EVMS Data by WBS
- System Folder

- Stock
- Specials
- System

Project: SSFS - Space Solar Power Satellite

Milestone: 2. PDR (Preliminary Design Review)

Instrument: 02. Receive Payload

Total # of Developing Organizations

Version or Release:

Organization Data

Name of Developing Org.

CMMI of Develing Org

Type of SW Develop Method

Application Data

Primary Application Type

Primary/Total Percent

Secondary Application Type

Secondary/Total Percent

Sizing Data

Number of Requirements

Number of Ext. Interface Reqs.

Primary Language

New SLOC

Count Type

Modified Code

Reused Code

Schedule and Resource Data

Requirements Analysis

CADRe (Part B)

SCI Software Input

Software Configuration Item Information (CSCI)

Program:

SSPS - Space Solar Power Satellite

Milestone:

2. PDR (Preliminary Design Review)

Current

[- Year -]

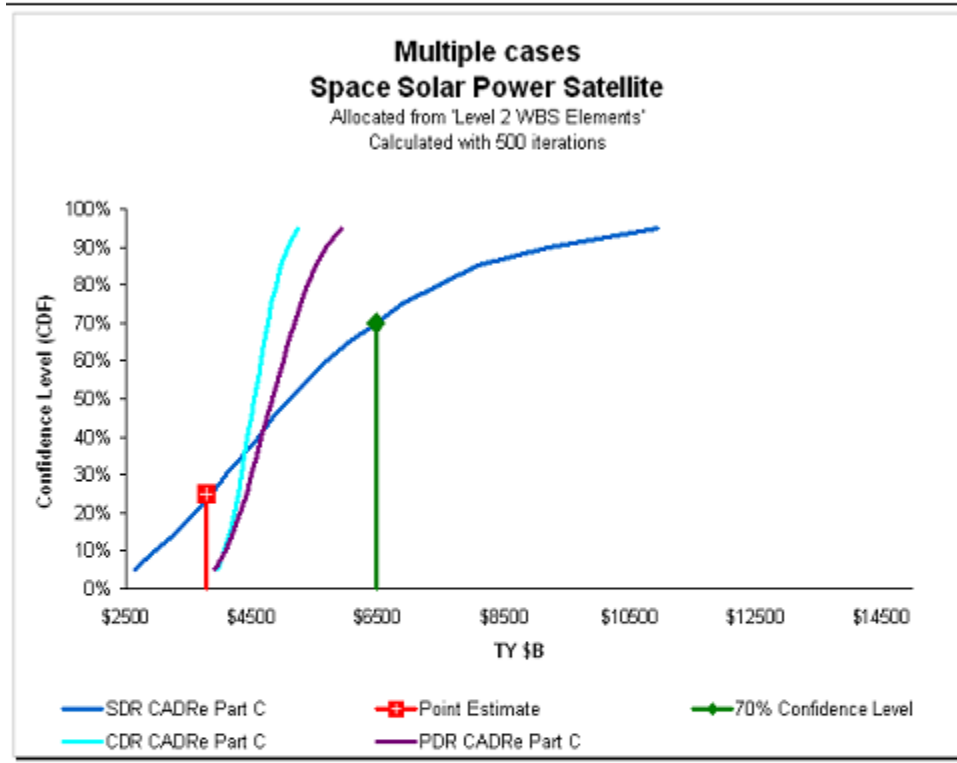
-----ACTUALS----- | -----ESTIMATE TO COMPLETE-----

WBS	WBS Description	Total EAC	2005	2006	2007	2008	2009	2010	2011	2012	2013
1.	Space Solar Power Satellite	4009.9300	342....	513....	855...	13....	37...	59...	55...	402...	23...
1.1.	Project Management	105.2100	9.1400	13.7...	22....	.34...	9.7...	15....	14....	10....	5.9...
1.2.	Systems Engineering	57.3300	4.9800	7.47...	12....	.18...	5.2...	8.4...	7.8...	5.6...	3.1...
1.3.	Safety and Mission Assurance	19.8700	1.7260	2.58...	4.3...	.06...	1.8...	2.9...	2.7...	1.9...	1.1...
<Undefined>											
1.4.	Science/Technology	29.8000	2.5900	3.88...	6.4...	.09...	2.7...	4.3...	4.0...	2.9...	1.6...
<Undefined>											
<Undefined>											
<Undefin...>											
<Undef...>											
1.4....	ISuper Dense Packed ASICS	10.6200	1.0620	1.06...	1.0...	1.0...	1.0...	1.0...	1.0...	1.0...	1.0...
1....	IHigh Power Propellant Develop...	9.2800	.9280	.9280	.92...	.92...	.92...	.92...	.92...	.92...	.92...
1.5.	Payloads	56.2700	4.8880	7.33...	12....	.18...	5.1...	8.2...	7.7...	5.5...	3.1...
1.5.1.	Transmit Payload	42.3800	3.6820	5.52...	9.2...	.13...	3.9...	6.2...	5.8...	4.1...	2.4...
<Undefined>											
1.5.2.	Receive Payload	13.8900	1.2060	1.80...	3.0...	.04...	1.2...	2.0...	1.9...	1.3...	.78...
<Undefined>											
<Undefin...>											
1.5.2.1...	ISelf-Rigidizing Rectenna Structure	5.6600	.5660	.5660	.56...	.56...	.56...	.56...	.56...	.56...	.56...
1.5....	ILaser Conditioning Receiver Ele...	4.2300	.4230	.4230	.42...	.42...	.42...	.42...	.42...	.42...	.42...
1.6.	Spacecraft	2037.2700	171....	257....	428...	6.7...	19...	30...	28...	206...	11...
1.6.1.	SC Project Management	41.1700	2.9780	4.46...	7.4...	.15...	4.2...	6.8...	6.3...	4.6...	2.6...
1.6.2.	SC Systems Integration, Assembl...	663.6400	52.8...	79.2...	132...	2.2...	65....	10....	96....	69....	40....
<Undefined>											
1.6.3.	Spacecraft/Orbiter	1332.4600	115....	173....	289...	4.3...	12...	19...	18...	132...	75...
1.6.3.1.	SC-Orbiter Structures & Mechani...	307.9700	26.7...	40.1...	66....	1.0...	28....	45....	42....	30....	17....
1.6.3.2.	S/C -Orbiter Thermal Control Sub...	83.2200	7.2300	10.8...	18....	.27...	7.6...	12....	11....	8.2...	4.1...
<Undefin...>											
1.6.3.3.	SC-Orbiter Electrical Power & Di...	222.0800	19.2...	28.9...	48....	.72...	20....	32....	30....	22....	12....

S-Curve by Type

S-Curve Type

Tot Lvl



Import of S-Curves, Total Level,
 from ACEIT's Excel-based
 Project Office Support Tool (POST)
 at different milestones
 (TY\$)

A	B	C	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	
Tot Lvl	Scurve	Cost Values for SDR	2629.0	2986.0	3330.8	3618.8	3868.7	4099.5	4352.	4594.5	4831.3	5096.6	5407.6	5696.45	6016.61	6465.82	6895.68	7483.26	8
Tot Lvl	Scurve	Cost Values for CDR	3972.9	4084.2	4156.4	4221.2	4287.5	4333.7	4380.	4434.0	4486.1	4540.1	4595.1	4642.79	4699.65	4759.04	4815.09	4888.12	4
Tot Lvl	Scurve	Cost Values for PDR	3911.0	4095.7	4212.0	4316.0	4422.2	4491.9	4579.	4649.0	4741.3	4827.2	4913.7	4993.54	5078.96	5181.62	5263.31	5378.25	5

A	B	C	Cost	Confidence
Tot Lvl	Markers	Point Es	3786.33	.2510
Tot Lvl	Markers	70% Co	6465.82	.7000

Sect. D - Risk Allocation

- D1. Conf Import by Proj X Milestone
- D2. Conf Import
- D3. Conf Import ODBC Stream

Sect. D2 - S Curves

- S-Curve by Type
- S-Curve ODBC Import
- S-Curve ODBC Stream

Sect. E - EVMS

- A. Data Combined Table #2
- CPR_Common Header Info
- CPR_Format 1
- D03. WBS Data by ContNo
- Data from EVMS System
- e. Compare CADRe to EVMS
- e. Data Combined Table - test 1
- EVMS Data by WBS

System Folder

Stock

Specials

System

COST PERFORMANCE REPORT: COMMON HEADER INFO

1. Contractor

CPR Template

2. Contract

a. Name

United Solar Associates

a. Name

SSPS - Space Solar Power

b. Location *(Address and ZIP Code)*

15345 Lasermatics Drive
Denver, CO 80202

b. Number

N2005YNOT493MM

c. Type

CPIF/AF

d. Share Ratio

3. Program

4. Report Period

a. Name

Space Solar Power Satellite System

Unique Report Period Description

06. Post-PDR CPR F1-5

a. From *(YYYYMMDD)*

2006/06/24

b. Phase *(X one)*

RDT&E

Production

b. To *(YYYYMMDD)*

2006/07/23

CLASSIFICATION *(When filled in)*

Common Header Info

PERFORMANCE REPORT: COMMON HEADER INFORMATION

Contractor:

a. Name:

Contract Name:

Period Descriptor: ← 1st CPR I

Contract Data Dollars In:

Period From: to

Quantity	b. Negotiated Cost	c. Est. Cost Authorized Unpriced Work	d. Target Profit / Fee	e. Target Price	f. Estimated Price	g. Contract Ceiling
<input type="text" value="3"/>	<input type="text" value="3786.1B"/>	<input type="text" value="0"/>	<input type="text" value="378.6B"/>	<input type="text" value="4164.7B"/>	<input type="text" value="4164.7B"/>	<input type="text" value="N/A"/>

Estimated Cost at Completion

7. Authorized Contractor Representative

	Mgmt Ext at Completion (1)	Contract Budget at Base (2)	Variance (3)	a. Name (Last, First, MI)	b. Title
Best Case	<input type="text" value="3200.0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Worst Case	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	c. Signature	d. Date Sig
Most Likely	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Performance Data

Item (1)	Current Period					Cumulative to Date					Reprogramming	
	Budgeted Cost		Actual		Variance	Budgeted Cost		Actual		Variance	Adjustments	
	Work Scheduled	Work Performed	Cost Work Performed	Work Scheduled		Work Performed	Cost Work Performed	Schedule	Cost		Cost Variance	Budget
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Undefined>												
Project Management	1.1541	1.1541	1.3850	.0000	-.2308	1.1541	1.1541	1.3850	.0000	-.2308		88
Systems Engineering	.5765	.5765	.6341	.0000	-.0576	.5765	.5765	.6341	.0000	-.0576		44
Safety and Mission Assurance	.2306	.2237	.2537	-.0069	-.0300	.2306	.2237	.2352	-.0069	-.0115		17
<Undefined>												
Science/Technology	.3459	.3321	.3632	-.0138	-.0311	.3459	.3321	.3632	-.0138	-.0311		26
<Undefined>												
<Undefined>												
<Undefined>												
Super Dense Pac...	.0104	.0062	.0259	-.0042	-.0197	.0104	.0062	.0259	-.0042	-.0197		7.1
High Power ...	.0052	.0039	.0156	-.0012	-.0116	.0052	.0039	.0156	-.0012	-.0116		5.1
<Undefined>												
Transmit Payload	.4918	.4869	.5065	-.0049	-.0197	.4918	.4869	.5065	-.0049	-.0197		37
<Undefined>												
Receive Payload	.1612	.1580	.1644	-.0032	-.0064	.1612	.1580	.1644	-.0032	-.0064		12
<Undefined>												
<Undefined>												
Self-Rigidizing Recten...	.0032	.0013	.0145	-.0019	-.0132	.0032	.0013	.0048	-.0019	-.0035		3.1
Laser Conditionin...	.0024	.0012	.0089	-.0012	-.0077	.0024	.0012	.0041	-.0012	-.0029		2.1
<Undefined>												
SC Program Management	.3447	.3447	.4137	.0000	-.0689	.3447	.3447	.4137	.0000	-.0689		26



Pages

Stock

Specials

System

New

links...

ferences...

Info From Instance

manage...

< > >>

ow Log

uthoring code

rocess

to-Word

elp



Collaboration Page

Electronic Connection Via Internet from source (e.g., contractor) to Project (Connects by specifying an internet port (#80 at NASA))

B. Info From EVMS System

Entered Description

Entered Textual Data

Entered Table Data

Col 1	Col #2	Column 3

Contract Name: **SSPS - Space Solar Power Satellite**

Period Descriptor: **03. Post SDR CPR F1_8** ← 8th CPR I

Contract Data Dollars In:

Period From **2006/01/24** to **2006/02/23**

Quantity	b. Negotiated Cost	c. Est. Cost Authorized Unpriced Work	d. Target Profit / Fee	e. Target Price	f. Estimated Price	g. Contract Ceiling
3	3786.1B	0	378.6B	4164.7B	4164.7B	N/A

Estimated Cost at Completion

7. Authorized Contractor Representative

	Mgmt Ext at Completion (1)	Contract Budget at Base (2)	Variance (3)	a. Name (Last, First, MI)	b. Title
Best Case	<input type="text" value="3200.0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Worst Case	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	c. Signature	d. Date Sig
Most Likely	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Performance Data

Item (1)	Current Period					Cumulative to Date					Reprogramming	
	Budgeted Cost		Actual		Variance	Budgeted Cost		Actual		Variance	Adjustments	
	Work Scheduled	Work Performed	Cost Work Performed	Work Scheduled		Work Performed	Cost Work Performed	Schedule	Cost		Cost Variance	Budget
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Undefined>												
Project Management	17.3122	17.3122	20.7747	.0000	-3.4624	20.7747	14.5423	21.6057	-6.2324	-7.0634		88
Systems Engineering	8.6473	8.6473	9.5120	.0000	-.8647	10.3767	9.3391	10.8956	-1.0377	-1.5565		44
Safety and Mission Assurance	3.4589	3.3551	3.8048	-.1038	-.4497	4.1507	3.9432	4.1507	-.2075	-.2075		17
<Undefined>												
Science/Technology	5.1884	4.9808	5.4478	-.2075	-.4670	6.2260	5.9147	6.4128	-.3113	-.4981		26
<Undefined>												
<Undefined>												
<Undefined>												
Super Dense Pac...	.4151	.2490	1.0377	-.1660	-.7886	.4981	.3885	.5977	-.1096	-.2092		7.1
High Power ...	.2075	.1577	.6226	-.0498	-.4649	.2490	.2241	.2989	-.0249	-.0747		5.1
<Undefined>												
Transmit Payload	7.3767	7.3029	7.5980	-.0738	-.2951	8.8520	8.4094	8.8520	-.4426	-.4426		37
<Undefined>												
Receive Payload	2.4177	2.3694	2.4661	-.0484	-.0967	2.9013	2.6982	2.9013	-.2031	-.2031		12
<Undefined>												
<Undefined>												
Self-Rigidizing Recten...	.1209	.0484	.5440	-.0725	-.4956	.1451	.0870	.1741	-.0580	-.0870		3.1
Laser Conditionin...	.0967	.0484	.3578	-.0484	-.3095	.1161	.1044	.1393	-.0116	-.0348		2.1
<Undefined>												
SC Program Management	5.1707	5.1707	6.2049	.0000	-1.0341	6.2049	5.5844	9.3073	-.6205	-3.7229		26

Contract Name:

Report Period Descriptor

Report from to

CPR Template Format 5

6. Evaluation

Empty content area for evaluation text.

Program:

EVM/CPR EAC's

ADRe Milestone:

EVMS Report Descriptor:

Report Period from: to

CADRe System

----- EAC -----

From EVMS System

----- Estimate at

	Col 1	Pre-CADRe	CADRe
1.	Space Solar Power Satellite	4009.9300	
1.1.	Project Management	105.2100	
1.2.	Systems Engineering	57.3300	
1.3.	Safety and Mission Assura...	19.8700	
	<Undefin...		
1.4.	Science/Technology	29.8000	
	<Undefin...		
	<Und...		
	<U...		
	=		
	ISuper Dense Packed ASICS	10.6200	
	IHigh Power Propellant Dev...	9.2800	
1.5.	Payloads	56.2700	
1.5.1.	Transmit Payload	42.3800	
	<Und...		
1.5.2.	Receive Payload	13.8900	
	<Und...		
	<U...		
	1 ISelf-Rigidizing Rectenna S...	5.6600	
	ILaser Conditioning Receiv...	4.2300	
1.6.	Spacecraft	2037.2700	
1.6.1.	SC Project Management	41.1700	
1.6.2.	SC Systems Integration, As...	663.6400	
	<Und...		
1.6.3.	Spacecraft/Orbiter	1332.4600	
1.6.3.1.	SC-Orbiter Structures & Me...	307.9700	
1.6.3.2.	S/C -Orbiter Thermal Contr...	83.2200	
	<U...		
1.6.3.3.	SC-Orbiter Electrical Power...	222.0800	

	Col 1	SPI GEAC	CPI
<Undefined>			
1.1.	Project Management	97.094230	102.
1.2.	Systems Engineering	50.572977	55.
1.3.	Safety and Mission Assurance	18.900967	19.
	<Undefined>		
1.4.	Science/Technology	28.351451	28.
	<Undefined>		
	<Undefin...		
	<U...		
	1. Super Dense Packed ASICS (...)	9.070501	9.
	High Power Propellant Devel...	6.978284	7.
<Undefined>			
1.5.1.	Transmit Payload	40.309206	41.
	<Undefin...		
1.5.2.	Receive Payload	13.211390	13.
	<Undefin...		
	<Undef...		
	1.5.... Self-Rigidizing Rectenna Stru...	3.570153	5.
	1. Laser Conditioning Receiver ...	2.832912	3.
<Undefined>			
1.6.1.	SC Program Management	33.506297	37.
1.6.2.	SC Systems Integration, Asse...	620.131673	623.
	<Undefin...		
1.6.3.	Spacecraft/Orbiter	1267.232713	1294.
	<Undefin...		
	<Undefin...		
	<Undefin...		

Database Search

Cost per Kg of Mass + Cont by Program and Milestone

Program

SSPS - Space Solar Power Satellite

Milestone	Mass CBE Kg	Mass CBE + Cont Kg	Total EAC	Cost per Kg (\$1000)
1. SDR (System Design Review)	790208	869229	N/A	
2. PDR (Preliminary Design Review)	869229	956152	\$4,009.93	\$4,613.20
3. CDR (Critical Design Review)	956151	1051767	\$3,970.62	\$4,567.98

_OEM_V1_



Pages

Stock

Specials

System

New

links...

ferences...

1 Cost per

1 of 3

anage...

< -> >>

ow Log

uthoring

code

rocess

:to-Word

elp





Pages

Stock

Specials

System

New

links...

ferences...

2.1 All Cost

1 of 1

anage...

< > >>

ow Log

uthoring
code

rocess

:to-Word

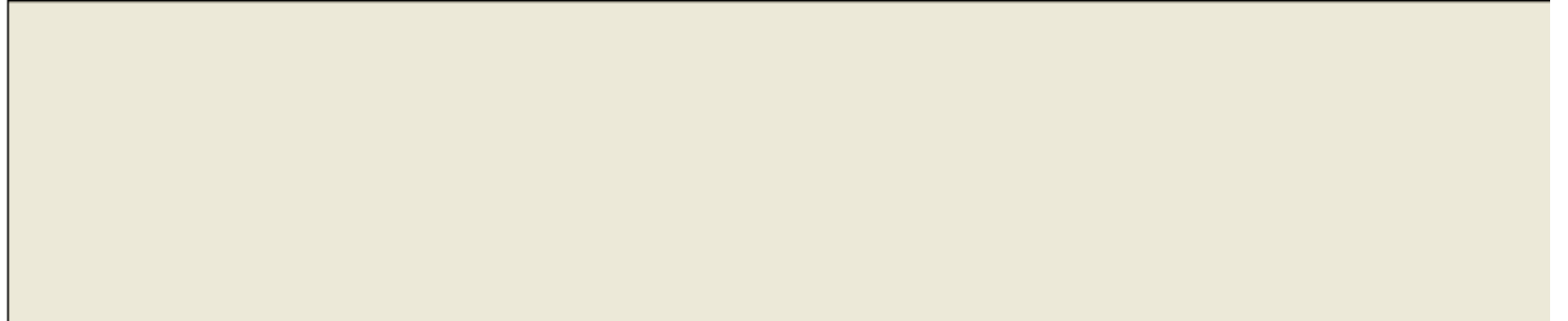
elp

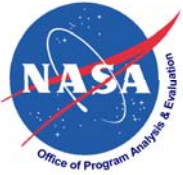


Database Search

Cost per Kg of Mass + Cont - ALL Programs and Milestones

Program	Milestone	Mass CBE (Kg)	Mass CBE + Cont (Kg)	Total EAC	Cost per Kg (\$1
IX25S - Infrared X25 Satellite	1. SDR (System Design	1129997	1242996	N/A	
IX25S - Infrared X25 Satellite	2. PDR (Preliminary Desi	738845	812729	4811.916	5535.843834018
IX25S - Infrared X25 Satellite	3. CDR (Critical Design R	0	0		
SSPS - Space Solar Power Satellite	1. SDR (System Design	790208	869229	N/A	
SSPS - Space Solar Power Satellite	2. PDR (Preliminary Desi	869229	956152	4009.93	4613.203195015
SSPS - Space Solar Power Satellite	3. CDR (Critical Design R	956151	1051767	3970.62	4567.979209161
WW20S - Weather V20 Satellite	1. SDR (System Design	977447	1075192	N/A	
WW20S - Weather V20 Satellite	2. PDR (Preliminary Desi	923556	1015912	2549.1125	2932.613269920
WW20S - Weather V20 Satellite	3. CDR (Critical Design R	0	0		





SUMMARY

- ENE facilitates project cost management
 - Electronic transmission of CPR's from performing organization to customer
 - Electronic population of CADRe Parts A, B & C information (via “docking & collaboration pages”)
 - Sharing of cost information between CPR's and CADRe's
 - Building project CPR & CADRe historical database (evolutionary)
 - Analysis of CPR and CADRe data



BACKUP CHARTS

- A1- Program Cover Page
- A1A - Mission Objective
- A2- Ref List Page
- A3- CADRe -Textual
- A4- CADRe - Graphics
- Sect. B - Technical Data
- Sect. C - Cost Data
- Sect. D - Risk Allocation
- Sect. D2 - S Curves
- Sect. E - EVMS
- A. Data Combined Table #2
- CPR_Common Header Info
- CPR_Format 1
- D03. WBS Data by ContNo
- Data from EVMS System
- e. Compare CADRe to EVMS
- e. Data Combined Table - test 1
- EVMS Data by WBS
- System Folder

Stock

Specials

System

Milestone

2. PDR (Preliminary Design Review)

CADRe (Part A)

Description:

Cost Analysis Data Requirement - Graphics

Program:

SSPS - Space Solar Power Satellite

Milestone:

2. PDR (Preliminary Design Review)

Exhibit:

Exhibit 1

Graphic/Multimedia Description

CADRe - Graphics

Cost Requirement - Graphics

Program: SSF3 - Space Solar Power Satellite

Milestone: 2. PDR (Preliminary Design Review)

CADRe (Part B)

Hardware Parameters

WBS	WBS Description	Mass CBE	Mass CBE +Cont	Peak Power	Dimension	% New D...
1.	Space Solar Power Satellite					
1.1.	Project Management					
1.2.	Systems Engineering					
1.3.	Safety and Mission Assurance					
1.3.1.	Safety and Mission Assurance - Level 3					
1.3.1.1.	Safety and Mission Assurance - Level 4					
1.3.1.1.1.	Safety and Mission Assurance - Level 5					
1.3.1.1.1.1.	!Collateral Damage to Receiving S/C					
1.4.	Science/Technology					

Quantities

WBS	WBS Description	Flight	Spares	Eng. Models	Test Models
1.3.	Safety and Mission Assurance				
1.3.1.	Safety and Mission Assurance - Level 3				
1.3.1.1.	Safety and Mission Assurance - Level 4				
1.3.1.1.1.	Safety and Mission Assurance - Level 5				
1.3.1.1.1.1.	!Collateral Damage to Receiving S/C				
1.4.	Science/Technology				
1.4.1.	Science/Technology - Level 3				
1.4.1.1.	Science/Technology - Level 4				

Additional Technical Parameters

WBS	WBS Description	TP1 Name	TP1 Val	TP2 Name	TP2 Val	TP3 Name	TP3 Val
1.3.	Safety and Mission Assurance						
1.3.1.	Safety and Mission Assurance - Level 3						
1.3.1.1.	Safety and Mission Assurance - Level 4						
1.3.1.1.1.	Safety and Mission Assurance - Level 5						
1.3.1.1.1.1.	!Collateral Damage to Receiving S/C						
1.4.	Science/Technology						
1.4.1.	Science/Technology - Level 3						
1.4.1.1.	Science/Technology - Level 4						
1.4.1.1.1.	Science/Technology - Level 5						

Program

CADRe (Part B)

Milestone

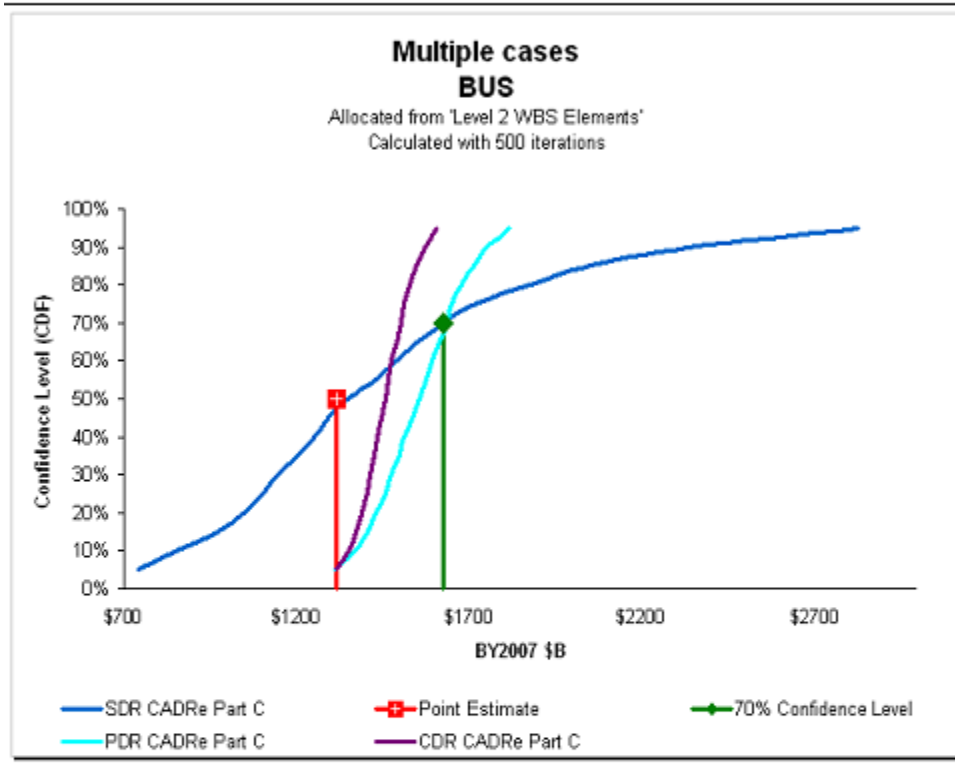
Milestone	WBS Name	WBS	Mass CBE	Mass CBE + Cont
2. PDR (Preliminary Design Review)	1.	Space Solar Power Satellite		
2. PDR (Preliminary Design Review)	1.1.	Project Management		
2. PDR (Preliminary Design Review)	1.2.	Systems Engineering		
2. PDR (Preliminary Design Review)	1.3.	Safety and Mission Assurance		
2. PDR (Preliminary Design Review)	1.3.1.1.1.	!Collateral Damage to Receiving S/C		
2. PDR (Preliminary Design Review)	1.4.	Science/Technology		
2. PDR (Preliminary Design Review)	1.4.1.1.1.1.	!Super Dense Packed ASICS		
2. PDR (Preliminary Design Review)	1.4.1.1.1.1.1.	!High Power Propellant Development		
2. PDR (Preliminary Design Review)	1.5.	Payloads		
2. PDR (Preliminary Design Review)	1.5.1.	Transmit Payload	276009	303610
2. PDR (Preliminary Design Review)	1.5.1.1.1.1.	!Laser Gimbal Structural Analysis		
2. PDR (Preliminary Design Review)	1.5.2.	Receive Payload	68067	74874
2. PDR (Preliminary Design Review)	1.5.2.1.1.1.	!Self-Rigidizing Rectenna Structure		
2. PDR (Preliminary Design Review)	1.5.2.1.1.1.1.	!Laser Conditioning Receiver Electronics SW		
2. PDR (Preliminary Design Review)	1.6.	Spacecraft		
2. PDR (Preliminary Design Review)	1.6.1.	SC Project Management		
2. PDR (Preliminary Design Review)	1.6.2.	SC Systems Integration, Assembly, & Test		
2. PDR (Preliminary Design Review)	1.6.2.1.1.1.	!Laser Generator Vibration and Acoustic test		
2. PDR (Preliminary Design Review)	1.6.3.	Spacecraft/Orbiter		
2. PDR (Preliminary Design Review)	1.6.3.1.	SC-Orbiter Structures & Mechanisms	100000	110000
2. PDR (Preliminary Design Review)	1.6.3.2.	S/C -Orbiter Thermal Control Subsystem	25000	27500
2. PDR (Preliminary Design Review)	1.6.3.2.1.1.1.	!Thermoelectric Coupling Device ASICS		
2. PDR (Preliminary Design Review)	1.6.3.3.	SC-Orbiter Electrical Power & Distribution Group	111100	122210
2. PDR (Preliminary Design Review)	1.6.3.4.	SC-Orbiter Guidance, Navigation & Control (GN&C)/	56250	61875
2. PDR (Preliminary Design Review)	1.6.3.5.	SC-Orbiter Propulsion Subsystem	67782	74560
2. PDR (Preliminary Design Review)	1.6.3.5.1.1.	!Pyrotechnics Dampeners		
2. PDR (Preliminary Design Review)	1.6.3.6.	SC-Orbiter Communications, Command and Data	86000	94600
2. PDR (Preliminary Design Review)	1.6.3.7.	SC-Orbiter Flight System Software		
2. PDR (Preliminary Design Review)	1.6.3.8.	SC-Orbiter Retirement & Disposal		

790208

869229

S-Curve by Type

S-Curve Type



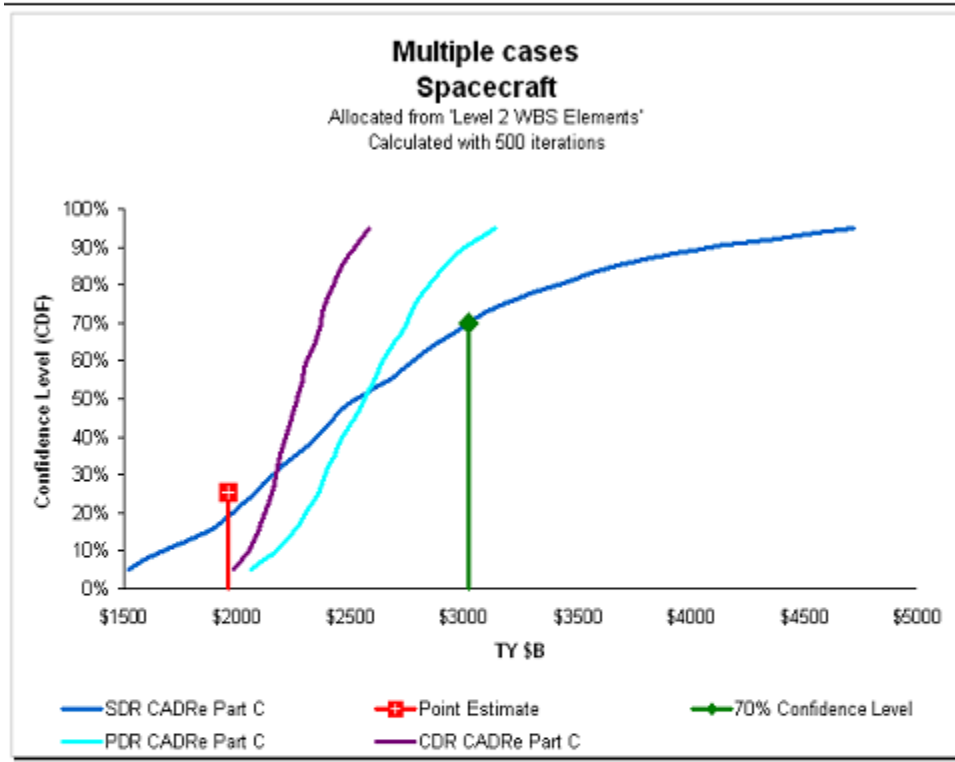
Import of S-Curves, Bus Level,
from ACEIT's Excel-based
Project Office Support Tool (POST)
at different milestones
(BY\$)

A	B	C	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	
Bus Lvl	Scurve	Cost Values for SDR	745.71	856.14	972.78	1047.5	1104.5	1150.6	1205.	1252.1	1289.8	1346.1	1434.6	1492.35	1550.77	1628.89	1721.91	1876.90	2
Bus Lvl	Scurve	Cost Values for PDR	1310.0	1374.1	1405.3	1434.0	1462.8	1478.0	1500.	1515.9	1540.0	1560.2	1577.9	1594.50	1614.29	1639.20	1651.40	1681.42	1
Bus Lvl	Scurve	Cost Values for CDR	1315.6	1352.1	1370.3	1387.0	1404.1	1413.8	1422.	1436.3	1447.8	1459.5	1470.4	1479.02	1492.44	1504.57	1513.46	1531.30	1

A	B	C	Cost	Confidence
Bus Lvl	Markers	Point Es	1314.14	.5001
Bus Lvl	Markers	70% Co	1628.89	.7000

S-Curve by Type

S-Curve Type



Import of S-Curves, S/C Level,
from ACEIT's Excel-based
Project Office Support Tool (POST)
at different milestones
(TY\$)

A	B	C	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	
SC Lvl	Scurve	Cost Values for SDR	1517.9	1683.1	1861.1	1982.3	2079.9	2161.8	2259.	2347.8	2421.8	2524.9	2675.9	2782.58	2888.68	3020.20	3175.57	3414.98	3
SC Lvl	Scurve	Cost Values for PDR	2060.0	2177.6	2243.6	2299.1	2358.4	2387.4	2432.	2463.2	2514.4	2558.7	2604.5	2647.96	2697.58	2753.16	2789.49	2850.30	2
SC Lvl	Scurve	Cost Values for CDR	1988.9	2052.9	2089.5	2120.5	2153.9	2171.8	2188.	2215.0	2238.0	2262.5	2288.5	2310.12	2341.14	2366.92	2390.26	2424.73	2

A	B	C	Cost	Confidence
SC Lvl	Markers	Point Es	1961.00	.2554
SC Lvl	Markers	70% Co	3020.20	.7000

Contract Name:

Period Descriptor: ← 1st CPR I

Contract Data Dollars In:

Period From to

Quantity	b. Negotiated Cost	c. Est. Cost Authorized Unpriced Work	d. Target Profit / Fee	e. Target Price	f. Estimated Price	g. Contract Ceiling
<input type="text" value="3"/>	<input type="text" value="3786.1B"/>	<input type="text" value="0"/>	<input type="text" value="378.6B"/>	<input type="text" value="4164.7B"/>	<input type="text" value="4164.7B"/>	<input type="text" value="N/A"/>

Estimated Cost at Completion

7. Authorized Contractor Representative

	Mgmt Ext at Completion (1)	Contract Budget at Base (2)	Variance (3)	a. Name (Last, First, MI)	b. Title
Best Case	<input type="text" value="3200.0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Worst Case	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	c. Signature	d. Date Sig
Most Likely	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Performance Data

Item (1)	Current Period					Cumulative to Date					Reprogramming		
	Budgeted Cost		Actual		Variance	Budgeted Cost		Actual		Variance		Adjustments	
	Work Scheduled	Work Performed	Cost Work Performed	Schedule		Cost	Work Scheduled	Work Performed	Cost Work Performed	Schedule	Cost	Cost Variance	Budget
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
Undefined>													
Project Management	3.4624	3.4624	4.1549	.0000	-.6925	24.2371	21.8134	24.2371	-2.4237	-2.4237			88
Systems Engineering	1.7295	1.7295	1.9024	.0000	-.1729	12.1062	10.8956	12.1062	-1.2106	-1.2106			44
Safety and Mission Assurance	.6918	.6710	.7610	-.0208	-.0898	4.8425	4.6972	4.8425	-.1453	-.1453			17
<Undefined>													
Science/Technology	1.0377	.9962	1.0896	-.0415	-.0934	7.2637	6.9732	7.2637	-.2905	-.2905			26
<Undefined>													
<Undefined>													
<Undefined>													
Super Dense Pac...	.0830	.0498	.2075	-.0332	-.1577	.5811	.5230	.5811	-.0581	-.0581			7.1
High Power ...	.0415	.0315	.1245	-.0100	-.0930	.2905	.2789	.2905	-.0116	-.0116			5.1
<Undefined>													
Transmit Payload	1.4753	1.4606	1.5196	-.0148	-.0590	10.3273	9.2946	10.3273	-1.0327	-1.0327			37
<Undefined>													
Receive Payload	.4835	.4739	.4932	-.0097	-.0193	3.3848	3.2156	3.3848	-.1692	-.1692			12
<Undefined>													
<Undefined>													
Self-Rigidizing Recten...	.0242	.0097	.1088	-.0145	-.0991	.1692	.1608	.1692	-.0085	-.0085			3.1
Laser Conditionin...	.0193	.0097	.0716	-.0097	-.0619	.1354	.1286	.1354	-.0068	-.0068			2.1
<Undefined>													
SC Program Management	1.0341	1.0341	1.2410	.0000	-.2068	7.2390	6.1532	10.8585	-1.0859	-4.7054			26

Contract Name:

Period Descriptor: 5th CPR I

Contract Data Dollars In:

Period From: to

Quantity	b. Negotiated Cost	c. Est. Cost Authorized Unpriced Work	d. Target Profit / Fee	e. Target Price	f. Estimated Price	g. Contract Ceiling
<input type="text" value="3"/>	<input type="text" value="3786.1B"/>	<input type="text" value="0"/>	<input type="text" value="378.6B"/>	<input type="text" value="4164.7B"/>	<input type="text" value="4164.7B"/>	<input type="text" value="N/A"/>

Estimated Cost at Completion

7. Authorized Contractor Representative

	Mgmt Ext at Completion (1)	Contract Budget at Base (2)	Variance (3)	a. Name (Last, First, MI)	b. Title
Best Case	<input type="text" value="3200.0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Worst Case	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	c. Signature	d. Date Sig
Most Likely	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Performance Data

Item (1)	Current Period					Cumulative to Date					Reprogramming	
	Budgeted Cost		Actual		Variance	Budgeted Cost		Actual		Variance	Adjustments	
	Work Scheduled	Work Performed	Cost Work Performed	Work Scheduled		Work Performed	Cost Work Performed	Schedule	Cost		Cost Variance	Budget
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Undefined>												
Project Management	8.6561	8.6561	10.3873	.0000	-1.7312	41.5493	39.4719	46.7043	-2.0775	-6.2324		88
Systems Engineering	4.3236	4.3236	4.7560	.0000	-.4324	20.7535	19.7158	24.9042	-1.0377	-5.1884		44
Safety and Mission Assurance	1.7295	1.6776	1.9024	-.0519	-.2248	8.3014	7.8863	8.6335	-.4151	-.7471		17
<Undefined>												
Science/Technology	2.5942	2.4904	2.7239	-.1038	-.2335	12.4521	11.8295	12.9502	-.6226	-1.1207		26
<Undefined>												
<Undefined>												
<Undefined>												
Super Dense Pac...	.2075	.1246	.5188	-.0830	-.3943	.9962	.8766	1.0460	-.1195	-.1693		7.1
High Power ...	.1038	.0789	.3113	-.0249	-.2324	.4981	.3785	.5130	-.1195	-.1346		5.1
<Undefined>												
Transmit Payload	3.6883	3.6514	3.7990	-.0369	-.1475	17.7040	16.8188	18.4122	-.8852	-1.5934		37
<Undefined>												
Receive Payload	1.2089	1.1847	1.2330	-.0242	-.0484	5.8025	5.5124	6.0346	-.2901	-.5222		12
<Undefined>												
<Undefined>												
Self-Rigidizing Recten...	.0604	.0242	.2720	-.0363	-.2478	.2901	.2611	.4352	-.0290	-.1741		3.1
Laser Conditionin...	.0484	.0242	.1789	-.0242	-.1547	.2321	.2089	.3249	-.0232	-.1161		2.1
<Undefined>												
SC Program Management	2.5854	2.5854	3.1024	.0000	-.5171	12.4097	10.5483	14.8917	-1.8615	-4.3434		26

Contract Name: **SSPS - Space Solar Power Satellite**

Period Descriptor: **09. Post-CDR CPR F1-3**

3rd CPR

Contract Data Dollars In:

Period From **2006/09/24** to **2006/10/23**

Quantity	b. Negotiated Cost	c. Est. Cost Authorized Unpriced Work	d. Target Profit / Fee	e. Target Price	f. Estimated Price	g. Contract Ceiling
<input type="text" value="3"/>	<input type="text" value="3786.1B"/>	<input type="text" value="0"/>	<input type="text" value="378.6B"/>	<input type="text" value="4164.7B"/>	<input type="text" value="4164.7B"/>	<input type="text" value="N/A"/>

Estimated Cost at Completion

7. Authorized Contractor Representative

	Mgmt Ext at Completion (1)	Contract Budget at Base (2)	Variance (3)	a. Name (Last, First, MI)	b. Title
Best Case	<input type="text" value="3200.0"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Worst Case	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	c. Signature	d. Date Sig
Most Likely	<input type="text" value="3786.1"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Performance Data

Item (1)	Current Period					Cumulative to Date					Reprogramming		
	Budgeted Cost		Actual		Variance	Budgeted Cost		Actual		Variance		Adjustments	
	Work	Work	Cost Work	Cost Work		Work	Work	Cost Work	Cost Work	Schedule	Cost	Variance	Budget	B
	Scheduled	Performed	Performed	Schedule	Cost	Scheduled	Performed	Performed	Schedule	Cost	Variance	Budget	B
Undefined>													
Project Management	8.4471	8.4471	10.1365	.0000	-1.6894	63.6257	57.2631	66.8070	-6.3626	-9.5439			88
Systems Engineering	4.2192	4.2192	4.6412	.0000	-.4219	31.7804	28.6024	38.1365	-3.1780	-9.5341			44
Safety and Mission Assurance	1.6877	1.6371	1.8565	-.0506	-.2194	12.7122	12.2037	13.3478	-.5085	-1.1441			17
<Undefined>													
Science/Technology	2.5315	2.4303	2.6581	-.1013	-.2278	19.0683	18.1148	20.0217	-.9534	-1.9068			26
<Undefined>													
<Undefined>													
<Undefined>													
Super Dense Pac...	.2025	.1215	.5063	-.0810	-.3848	1.5255	1.3729	2.2882	-.1525	-.9153			7.3
High Power ...	.1013	.0770	.3038	-.0243	-.2268	.7627	.5797	.8390	-.1831	-.2593			5.1
<Undefined>													
Transmit Payload	3.5993	3.5633	3.7072	-.0360	-.1440	27.1107	25.7551	28.4662	-1.3555	-2.7111			37
<Undefined>													
Receive Payload	1.1797	1.1561	1.2033	-.0236	-.0472	8.8855	7.9970	9.3298	-.8886	-1.3328			12
<Undefined>													
<Undefined>													
Self-Rigidizing Recten...	.0590	.0236	.2654	-.0354	-.2418	.4443	.4221	.6664	-.0222	-.2444			3.1
Laser Conditionin...	.0472	.0236	.1746	-.0236	-.1510	.3554	.3199	.6042	-.0355	-.2843			2.1
<Undefined>													
SC Program Management	2.5229	2.5229	3.0275	.0000	-.5046	19.0034	17.1031	24.7044	-1.9003	-7.6014			26

Database Search

Program

SSPS - Space Solar Power Satellite

Milestone

1. SDR (System Design Review)

Program	Milestone	WBS	WBS Desc	Mass CBE (Kg)	Mass CBE + Cont (Kg)
SSPS - Space Solar Pow	1. SDR (System Design	1.5.1.		276009	303610
SSPS - Space Solar Pow	1. SDR (System Design	1.5.2.		68067	74874
SSPS - Space Solar Pow	1. SDR (System Design	1.6.3.1.		100000	110000
SSPS - Space Solar Pow	1. SDR (System Design	1.6.3.2.		25000	27500
SSPS - Space Solar Pow	1. SDR (System Design	1.6.3.3.		111100	122210
SSPS - Space Solar Pow	1. SDR (System Design	1.6.3.4.		56250	61875
SSPS - Space Solar Pow	1. SDR (System Design	1.6.3.5.		67782	74560
SSPS - Space Solar Pow	1. SDR (System Design	1.6.3.6.		86000	94600

790208

869229

Database Search

Program

SSPS - Space Solar Power Satellite

Milestone

2. PDR (Preliminary Design Review)

Program	Milestone	WBS	WBS Desc	Mass CBE (Kg)	Mass CBE + Cont (Kg)
SSPS - Space Solar Pow	2. PDR (Preliminary De	1.5.1.		303610	333971
SSPS - Space Solar Pow	2. PDR (Preliminary De	1.5.2.		74874	82361
SSPS - Space Solar Pow	2. PDR (Preliminary De	1.6.3.1.		110000	121000
SSPS - Space Solar Pow	2. PDR (Preliminary De	1.6.3.2.		27500	30250
SSPS - Space Solar Pow	2. PDR (Preliminary De	1.6.3.3.		122210	134431
SSPS - Space Solar Pow	2. PDR (Preliminary De	1.6.3.4.		61875	68063
SSPS - Space Solar Pow	2. PDR (Preliminary De	1.6.3.5.		74560	82016
SSPS - Space Solar Pow	2. PDR (Preliminary De	1.6.3.6.		94600	104060

869229

956152

Database Search

Program

SSPS - Space Solar Power Satellite

Milestone

3. CDR (Critical Design Review)

Program	Milestone	WBS	WBS Desc	Mass CBE (Kg)	Mass CBE + Cont (Kg)
SSPS - Space Solar Pow	3. CDR (Critical Design	1.5.1.		333971	367368
SSPS - Space Solar Pow	3. CDR (Critical Design	1.5.2.		82361	90597
SSPS - Space Solar Pow	3. CDR (Critical Design	1.6.3.1.		121000	133100
SSPS - Space Solar Pow	3. CDR (Critical Design	1.6.3.2.		30250	33275
SSPS - Space Solar Pow	3. CDR (Critical Design	1.6.3.3.		134430	147874
SSPS - Space Solar Pow	3. CDR (Critical Design	1.6.3.4.		68063	74869
SSPS - Space Solar Pow	3. CDR (Critical Design	1.6.3.5.		82016	90218
SSPS - Space Solar Pow	3. CDR (Critical Design	1.6.3.6.		104060	114466

956151

1051767



Pages

Stock

Specials

System

Cost per Kg of Mass + Cont by Milestone and Program

Milestone

1. SDR (System Design Review)

Database Search

Program	Mass CBE Kg	Mass CBE + Cont Kg	Total EAC	Cost per Kg (\$1000)
IX25S - Infrared X25 Satellite	1129997	1242996	N/A	
SSPS - Space Solar Power Satellite	790208	869229	N/A	
WW20S - Weather V20 Satellite	977447	1075192	N/A	

New

links...

ferences...

.1 Cost per

3 of 3

anage...

< -> >>

ow Log

uthoring

code

rocess

:to-Word

elp



Program:

SSPS - Space Solar Power Satellite

Milestone

2. PDR (Preliminary Design Review)

Database Search

WBS	WBS Description	Mass CBE kg	Mass CBE...	Total EAC	Cost per Kg (\$1000)
1.	Space Solar Power Satellite			4009.9300	
1.1.	Project Management			105.2100	
1.2.	Systems Engineering			57.3300	
1.3.	Safety and Mission Assurance			19.8700	
<Undefined>					
1.4.	Science/Technology			29.8000	
<Undefined>					
<Undefined>					
<Undefined>					
1.4.1.1...	ISuper Dense Packed ASICS			10.6200	
1.4...	IHigh Power Propellant Develo...			9.2800	
1.5.	Payloads			56.2700	
1.5.1.	Transmit Payload	276009	303610	42.3800	139.586970126149
<Undefined>					
1.5.2.	Receive Payload	68067	74874	13.8900	185.511659588108
<Undefined>					
<Undefined>					
1.5.2.1.1.1.	ISelf-Rigidizing Rectenna Struct...			5.6600	
1.5.2.1...	ILaser Conditioning Receiver El...			4.2300	
1.6.	Spacecraft			2037.2700	
1.6.1.	SC Project Management			41.1700	
1.6.2.	SC Systems Integration, Asse...			663.6400	
<Undefined>					
1.6.3.	Spacecraft/Orbiter			1332.4600	
1.6.3.1.	SC-Orbiter Structures & Mecha...	100000	110000	307.9700	2799.72727272727
1.6.3.2.	S/C -Orbiter Thermal Control S...	25000	27500	83.2200	3026.18181818182
<Undefined>					

Total Mass CBE and Cont

790208

869229

Total EAC for WBS 1. (\$ Billions)

4009.93

Cost/ Kg of Mass + Cont (\$1000)

4613.20319501535

- A1- Program Cover Page
- A1A - Mission Objective
- A2- Ref List Page
- A3- CADRe -Textual
- A4- CADRe - Graphics
- Sect. B - Technical Data
 - B - 00 Payload Page Input
 - B - 01 Payload Combined Listing #1
 - B - 01 Payload Combined Listing #2
 - B - 01 Payload Combined Listing #3 - Filtered
 - B - 01 Payload Combined Listing #3 UnFiltered
 - B - 02.1 All Cost per Kg by Prog, Milestone
 - B - 02.1 Cost per Kg by Milestone, Prog
 - B - 02.1 Cost per Kg by Prog, Milestone
 - B - 02.2 Payload Mass CBE + Cont
 - B - 02.3 Mass by WBS
 - B - 02.4 Mass by Prog and Milestone
 - B - 10 Hardware Parameters Input
 - B - 20 CSCI Software Input
 - B - 21 Software Metrics
 - B - 22 Software Metrics
- Data CVS Output Docking Page
- Sect. C - Cost Data
 - C 01 - Cost by WBS x FY
 - C 01b - Cost by Prog and Milestone
 - C 02 - Import of Cost Data
 - C 02b - Import of Cost Data Temp
 - C 03 - Cost Data Import ODBC Stream
 - C - Cost Input Main
 - C - Cost Report By Milestone
 - C - Cost Rpt By Proj
 - C - Cost Rpt By WBS Lev 1
 - C - Definitions
 - C1 - Inp Det.Cost Total Prog NR R
- Sect. D - Risk Allocation
- Sect. D2 - S Curves
- Sect. E - EVMS
 - A. Data Combined Table #2
 - CPR - Common Header Info

Stock

Specials

System

Milestone 2. PDR (Preliminary Design Review)

Project	WBS	FY	Recurring	Non-Recurring
SSPS - Space Solar Po	1.0 - Project Mana	FY1	0	0
SSPS - Space Solar Po	Full Project	FY1	0	0

Cost Report By Project

Program SSPS - Space Solar Power Satellite

Milestone	WBS	FY	Recurring	Non-Recurring
1. SDR (System Design	1.0 - Project Mana	FY1	0	0
2. PDR (Preliminary De	1.0 - Project Mana	FY1	0	0
2. PDR (Preliminary De	Full Project	FY1	0	0

Cost Report By WBS Level 1

WBS Level 1 1.0 - Project Management

Project	Milestone	FY	Recurring	Non-Recurring
SSPS - Space Solar Po	1. SDR (System D	FY1	0	0
SSPS - Space Solar Po	2. PDR (Prelimina	FY1	0	0

Detail Cost Total Project - Input

Program: SSPS - Space Solar Power Satellite

As of Date: 25-Apr-2007

Thousands of Then-Year Dollars

Non- Recurring Costs

Elements of Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
NASA Labor							
Raw Material/Purchased Parts							
Prime Contractor							
Support Contractor							
Corporate G&A							
Totals - Non-Recurring	0	0	0				0

Recurring Costs

Elements of Cost	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Total
------------------	--------	--------	--------	--------	--------	--------	-------

Det.Cost Total Prog NR R

ost Total Project - Input

Thousands of Then-Year Dollars