

# System Integration

Element Type: System Integration

CER Type:

- Specific Analogy
- Database Averages

## Data Base Selection

- All Data Points
  - Manned
  - Unmanned
    - Earth Orbiting
      - Scientific
      - Observatory
      - Mapping/Meteorological
      - Communication
      - Positioning
      - Reconnaissance
    - Planetary
      - Inner Planet Explorer
      - Outer Planet Explorer
      - Lander
      - Probe
  - Launch Vehicle Stages
    - Liquid Stage
    - Solid Stage
  - Engines

	Complexity/Heritage %		System Integration Type			
	DDT&E	Flt Unit	DDT&E		Flt Unit	
IACO	1 _____	1 _____	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User
STO	1 _____	N/A	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User	N/A	
GSE						
Tooling	1 _____	N/A	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User	N/A	
M/E GSE	1 _____	N/A	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User	N/A	
SE&I	1 _____	1 _____	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User
PM	1 _____	1 _____	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User
LOOS	1 _____	N/A	<input type="checkbox"/> NAFCOM	<input type="checkbox"/> User	N/A	

Contingency % 0 \_\_\_\_\_      Program Support % 0 \_\_\_\_\_      Fee % 0 \_\_\_\_\_

**Suggested Percentages:**      15% - 30%      10 % - 15%      5% - 10%

# NAFCOM99 Missions

## Unmanned-Earth Orbiting

___	ACTS	___	GPSMYP	___	P78
___	AE-3	___	GRO	___	RADCAL
___	AEM-HCMM	___	HAWKEYE	___	REX
___	ALEXIS	___	HEAO-1	___	S3
___	AMPTE-CCE	___	HEAO-2	___	SAMPEX
___	ATS-1	___	HEAO-3	___	SCATHA
___	ATS-2	___	HETE	___	SME
___	ATS-5	___	IDCSP/A	___	SMS-1
___	ATS-6	___	INTELSAT-III	___	SSM
___	COBE	___	INTELSAT-IV	___	STEP0
___	CRRES	___	LANDSAT-1	___	STEP1
___	DARPA SAT	___	LANDSAT-4	___	STEP2
___	DE-1	___	Lewis	___	STEP3
___	DE-2	___	MACSAT	___	SWAS
___	D MSP-5D	___	MAGSAT	___	TACSAT
___	DSCS-II	___	MARISAT	___	TDRSS
___	DSCS-III A	___	MICROSAT	___	TIROS-M
___	DSCS-III B	___	Model-35	___	TIROS-N
___	DSP	___	MSTI	___	TOMSEP
___	ERBS	___	NATO III	___	TOPEX
___	FAST	___	ORSTED	___	UARS
___	FLTSATCOM	___	OSO-8	___	UFO
___	FREJA	___	OTA	___	VELA-IV
___	GPS-1				

## Unmanned-Planetary

___	Galileo Orbiter	___	Mariner-10	___	Pioneer-10
___	Galileo Probe	___	Mars Global Surveyor	___	Surveyor
___	Lunar Orbiter	___	Mars Observer	___	Viking Lander
___	Lunar Prospector	___	Mars Pathfinder	___	Viking Orbiter
___	Magellan	___	NEAR	___	Voyager
___	Mariner-4	___	Pioneer Venus Bus/Orbiter		
___	Mariner-6	___	Pioneer Venus Large Probe		
___	Mariner-8	___	Pioneer Venus Small Probe		

## Launch Vehicles

___	Centaur-D
___	Centaur-G'
___	External Tank
___	IUS
___	OMV
___	S-IC
___	S-II
___	S-IVB
___	SRB

## Manned

___	Apollo CSM
___	Apollo LM
___	Gemini
___	Lunar Rover
___	Shuttle Orbiter
___	Skylab Airlock
___	Skylab OWS
___	Spacelab

## Engines

___	F-1
___	J-2
___	RL-10A-3-1
___	SSME

— SRM

# System Integration Filters

## Mission Name

1<sup>st</sup>: \_\_\_\_\_  
2<sup>nd</sup>: \_\_\_\_\_  
3<sup>rd</sup>: \_\_\_\_\_

## Cost

D&D Subsystem Subtotal	_____	To	_____
STH Subtotal	_____	To	_____
Flight Unit Subsystem Subtotal	_____	To	_____

## Launch Year

From \_\_\_\_\_ To \_\_\_\_\_

## GSE

Mechanical:	_____	Existing/CFE	_____	GFE	_____	New	_____	Common
Software:	_____	Existing/CFE	_____	GFE	_____	New	_____	Common
Electrical:	_____	Existing/CFE	_____	GFE	_____	New	_____	Common
Tooling:	_____	Existing/CFE	_____	GFE	_____	New	_____	Common

# System Integration Filters

## PM/SEI

**Pre-Development Study:**     Minimal     Moderate     Extensive  
**Engineering Change Activity:**     Minimal     Moderate     Extensive  
**Contractor Expertise:**     High     Moderate     Low

## Levels of Management

**Prime:**     Single     Multi  
**Center:**     Single     Multi  
**Agency:**     Single     Multi

## Cost Growth Percentage

From \_\_\_\_\_ To \_\_\_\_\_

## Schedule Growth Percentage

From \_\_\_\_\_ To \_\_\_\_\_

## Contract Type

<input type="checkbox"/> Cost Plus Incentive Fee (CPIF)	<input type="checkbox"/> Cost Plus Award Fee (CPAF)
<input type="checkbox"/> Fixed Price Incentive (FPI)	<input type="checkbox"/> Fixed Price (FP)
<input type="checkbox"/> Cost Plus Fixed Fee (CPFF)	<input type="checkbox"/> Firm Fixed Price (FFP)

# System Integration Filters

IACO/STO

## Development Approach

Prototype

Protoflight

## Test Models

Development  
 Qualification

Structural  
 Flight

## Test Programs

Acoustic Response  
 Acceptance  
 Thermal Response  
 Functional

Static Characteristics  
 Life  
 Impact  
 Modal Vibration